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FREDERICK C. WARNSHUIS, M.D., F.A.C.S.
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Original Articles

THE NEWER METHODS OF DIAGNOSIS IN THE SURGERY OF THE KIDNEY.*

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I shall not attempt to review the clinical pictures presented by the various surgical lesions of the upper urinary tract, but rather direct your attention to the revolution which has taken place through the employment of our newer methods of diagnosis. In no other field of surgery have we advanced as rapidly toward a nearly ideal position in diagnosis. It has been a march of progress of which no member of the profession can afford to remain ignorant, and although the use of some of the methods must of necessity remain in the hands of those especially trained, yet this is no reason why every patient should not be given the benefit of a thorough examination.

What are the methods that have rendered our ability to make a diagnosis more accurate? 1. The employment of radiography of the urinary tract as a routine measure. 2. The use of the cystoscope and of the ordinary and X-ray ureteral catheters, and, finally, 3, the method known as pyelography, which consists in distending the lumen of the ureter and renal pelvis with collargol or similar solutions. These in brief are the chief weapons which we summon to our aid today in the conquest of the many difficult clinical problems. Such diagnostic methods have by no means supplanted the carefully taken history or the thorough examination of the patient, but they have made their interpretation a much easier task. Not so many years ago the principal data upon which we based our diagnosis of some surgical lesion of the upper urinary tract was enlargement of the kidney, renal colics, and pus or blood in the urine. If a patient had the symptoms of cystitis, he was treated locally for this condition without a thought of the possibility that the real disease might be higher up in the urinary tract. Even at the present day many such cases are treated medically for months and years, because the ease with which the more exact methods can be applied, is not sufficiently known.

Now before taking up the application of these newer methods in the diagnosis of the individual disease, let me offer a few suggestions derived from a large experience in this class of cases. The most satisfactory X-ray pictures of the urinary organs are obtained by the use of a compression apparatus to limit respiratory mobility and to bring the tube as close as possible to the parts. Both kidneys and the upper portion of both ureters can be included in one picture, and the lower portion of both ureters and the bladder in a second one. In very stout individuals it is best to make a separate exposure for each kidney. The angle at which pictures of the bony pelvis, (that is, of the pelvic portion of the ureters) are taken, is of great importance, because shadows of ureteral calculi may be obscured by the sacrum or the pubic bone, unless the pelvis is tilted as much as possible. (Fig. 1 and 2).

We prefer at the Michael Reese Hospital to use a soft tube, enabling us to secure more detail. The alimentary tract is thoroughly emptied by giving the patient an ounce of castor oil about twelve hours before the picture is taken, followed by two colonic flushings and limiting the diet to clear liquids, during the interval. One should be able to see in the X-ray picture, the shadow of the lower two-thirds of both kidneys, the outline of the psoas muscle, the shadows of the last two ribs, the transverse processes of all the lumbar vertebrae, and the details of the structure of the bodies of the lumbar vertebrae and of the pelvic bones. (Fig. 3). Nothing will lead to more disappointing results than to try to make a diag-

*Read at the annual meeting of the Michigan State Medical Society, held Sept. 2 1915 at Grand Rapids.

nosis from a poor radiograph, and every one who has seen the pictures which can be obtained by experienced radiographers will never again be satisfied with makeshift ones. Ureteral catheterization should never be done in the presence of any acute infection of the upper urinary tract. I have seen some disastrous



Fig. 1. Pelvis not tilted (compare with Fig. 2). Shadow of ureteral calculus (c) indistinct because it is lying over sacrum, while extraureteral shadow (P) is quite distinct (X-ray tracing.)

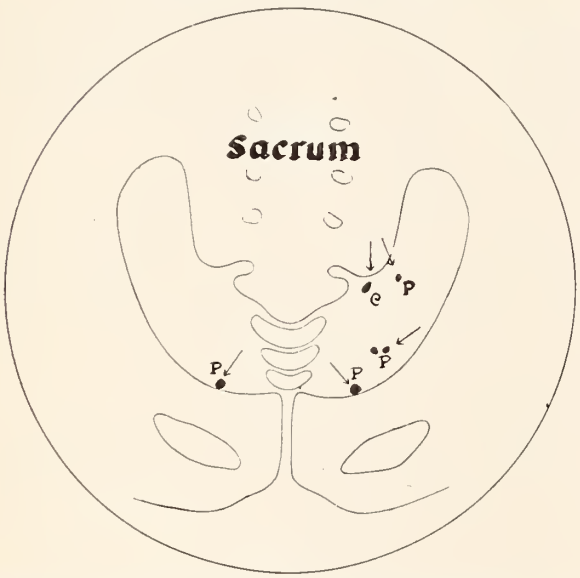


Fig. 2. X-ray tracing of same patient shown in Figure 1, but pelvis has been tilted. The shadow which proved to be that of a ureteral calculus (C) shows in a clear space. One also sees the shadows of a number of phleboliths (P) i. e. extraureteral shadows.

generalized infections follow such a catheterization, and even a simple cystoscopy is often poorly tolerated by such patients. Through the use of a special ureteral catheter called a shadowgraph or X-ray catheter, whose walls are impregnated with some substance giving a deep shadow in the X-ray picture, we can employ the same ureteral catheter for collecting urine from the kidney and for the differentiation of shadows within the urinary tract from

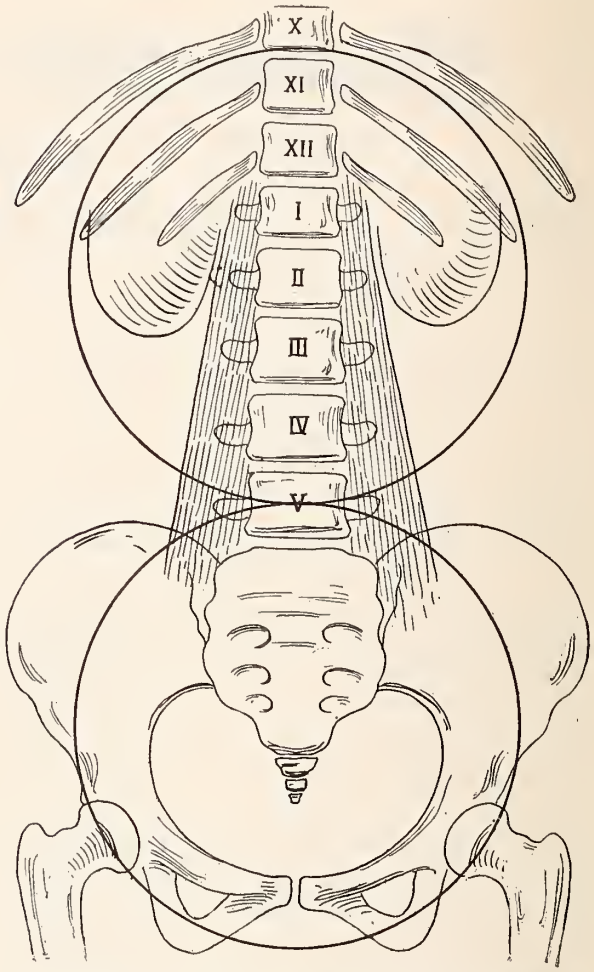


Fig. 3. Areas to be included in radiographs of the upper and lower urinary tract. The pictures must show the last two ribs, the transverse processes and bodies of all the lumbar vertebra, the shadow of the Psoas muscle and the lower two-thirds of each kidney. (See text.)

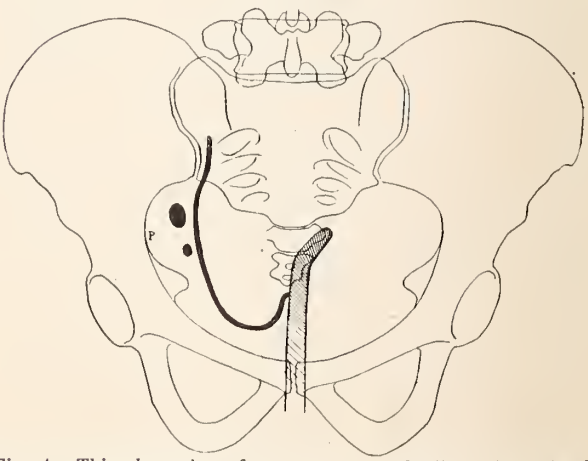


Fig. 4. This shows how far away as a rule the extraureteral shadows (P) are from the X-ray catheter, the cystoscope being left in place while radiograph is taken. (X-ray tracing.)

those lying close to it. (Fig. 4). I prefer to have the picture which includes the pelvic ureter taken with the cystoscope in the blad-

der when we wish to differentiate between shadows due to phleboliths, etc., and those due to calculi in the pelvic ureter. (Fig. 5). The shadowgraph or X-ray catheter holds the ureter rigid and does not allow it to fall outwards as occurs when the cystoscope is withdrawn and the catheter left without any support except the soft curving wall of the pelvic ureter. Unless the size and position of a shadow leaves but little doubt that it is due to a renal or ureteral calculus, one must never omit taking a second

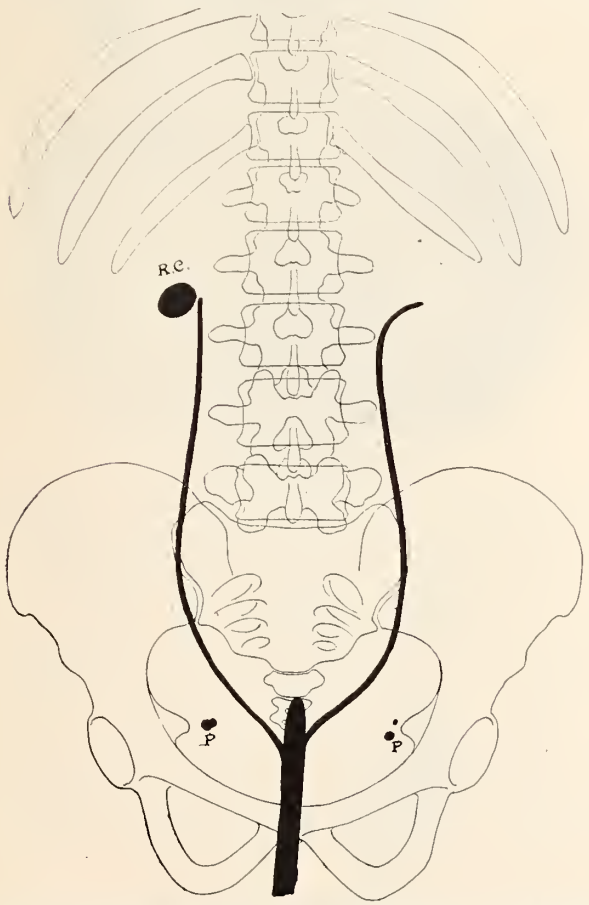


Fig. 5. Tracing of X-ray from case in which a renal calculus (R. C.) shadow and two extraureteral shadows, due to phleboliths (P) were present. This shows how essential it is to employ the X-ray catheter in cases of doubtful shadows in the urinary tract.

series of pictures with a shadowgraph catheter introduced into the ureter of the side upon which the shadow lies. Even though the clinical history be typical for calculus in the kidney or ureter, many mistakes have been made in the past in omitting this step in diagnosis.

Now just a word in regard to the dangers of collargol. The experimental work of Dr. Schnoor, now of Grand Rapids, and myself, published in January, 1915, in the *Journal of the American Medical Association*, shows clearly that if we use an elevation of three feet, that is, allow the solution to flow in under moderate gravity pressure, none will be forced into the tissues of the kidney. As soon as more pressure is used, the solution, no matter what it may be, is mechanically forced into the kidney tissue, and from here into the renal veins, and thence into the general circulation, causing death from pulmonary embolism. Pyelography can I grant be dispensed with in many cases where we use the shadowgraph or X-ray catheter, but it has become a confirmatory diagnostic procedure of such great value in a number of diseases that the earlier reports of ill-effects following the injection of collargol should not prejudice us to discard the method. I prefer the use of 10 per cent. collargol solution for pyelography, and the extensive experience of those who have used it by the gravity method without ill results speaks for the safety of the method.

1. CONGENITAL MALFORMATION AND ANOMALIES.

These are no longer regarded as medical curiosities, but they occur often enough to be thought of in every case. One never knows until every diagnostic resource has been exhausted whether some malformation of congenital origin or an anomaly of the kidney or ureter, or both, is the direct cause of the clinical symptoms. The most common lesions of this kind which occur are the following:

a. HORSESHOE KIDNEY.

Hydronephrosis, both infected and non-infected, and calculus formation[1] are the most frequent conditions which have been found in the solitary kidney, whether it be of the ordinary horseshoe or more completely fused varieties. We can always suspect the presence of such malformations, if there is a transverse enlargement extending across the abdomen at the level of the kidneys, or when the X-ray (in cases of calculus formation) shows shadows close to the median line. Through the introduction of collargol into the pelves of a fused kidney, we can readily recognize the condition by the close proximity of both pyelograms to the median line, and the fact that the ureter leaves the lower border of the injected pelvis and not its inner border, as in the pyelogram of a normal pelvis, or when the two pelves are superimposed

b. CONGENITAL MALPOSITION (DYSTOPIA) OF THE KIDNEY.

If there are no symptoms referable to the urinary tract, the condition may not be sus-

1. Eisendrath. Clinical Importance of the Horseshoe Kidney, Surgery, Gynecology and Obstetrics, October, 1912.

pected until found accidentally. I have seen two cases in which a pelvic kidney was mistaken for an abdominal tumor, and also an autopsy where the displaced kidney had obstructed the head during childbirth. Clinically, we see these cases on account of symptoms of obstruction to the outflow of urine or stone formation, and one should always suspect an anomaly if a shadow or a pyelogram (Fig. 6) is not in the position of the normal kidney, or the X-ray catheter shows that the ureter takes an unusual course. Pyelography and the use of the shadowgraph catheter have enabled us to make a diagnosis in a number of these cases where the displacement, whether congenital or acquired, varied in degree from a kidney lying in the first, second, or third (pelvic)

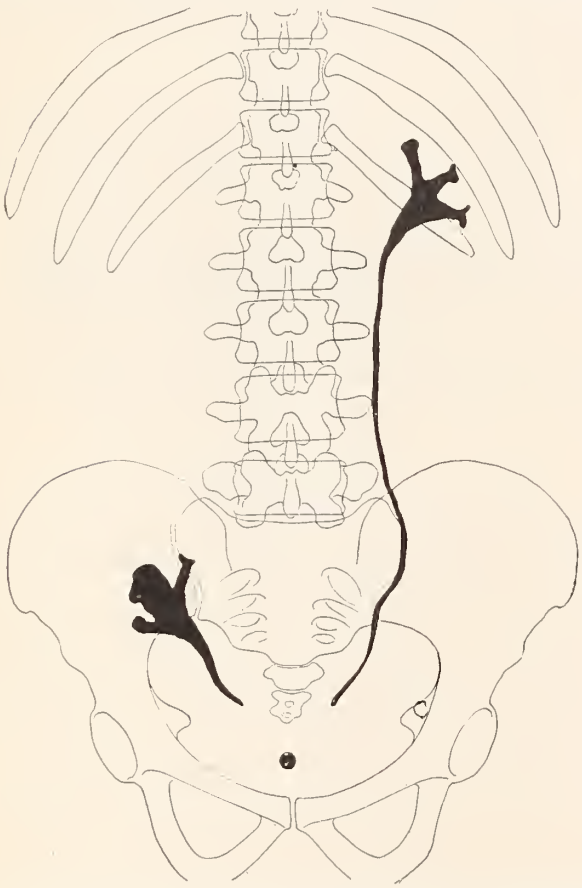


Fig. 6. X-ray tracing of case in which renal pelves were filled with collargol. On the right side the kidney is seen to lie at the level of the brim of the bony pelvis while on the left side the pyelogram is of the usual shape and the kidney in a normal position.

position of displacement, where ureteral catheterization and cystoscopy alone give us but little information.

d. INFANTILE KIDNEY OR HYPOPLASIA.

The diagnosis of the persistence of a congenital lack of development of a kidney must always be thought of.

By the use of pyelography we have an accurate way of recognizing the absence of a normal degree of filling of the ureter or renal pelvis. It is a vital matter to be able to recognize this condition before the opposite kidney is removed, or when a calculus, as in one of my cases, obstructs the normal ureter and the



Fig. 7. Congenital anomaly of the left kidney. There were two completely separated halves of the kidney. The upper half was normal in every respect and had its own renal pelvis and ureter. The lower half, owing to the abnormal insertion of the ureter (U) had been converted into an infected hydronephrotic sac.

entire task of renal secretion devolves upon the infantile kidney, resulting in calculous anuria.

Single Kidney.—This condition can, of course, be thought of when only one ureteral orifice is seen, but in pyelography we have an absolute method of demonstrating the presence of only one kidney.

Double Ureters and Double Renal Pelves—One never knows when these anomalies will be encountered. In a recent case (Fig. 7) an infected hydronephrotic sac was found, which had developed in the lower pelvis of a kidney completely separated from an upper pelvis. Each pelvis had its own ureter, and the two ureters fused just above the bladder, so that the condition could not be suspected when cystoscopy showed a single orifice on each side. Pyelography enables us to readily recognize the malformations.

Movable Kidney and Intermittent Hydronephrosis.—The simpler method of determining the degree of mobility of a floating kidney still remains a most reliable one. By filling the renal pelvis with collargol and then taking a picture with the patient first in the erect and

then in the horizontal positions, we can ascertain whether the range of movement of the kidney accounts for the symptoms. I believe that there are but few indications for operation in movable kidney, but have seen cases where the symptoms continued even after fixation of the kidney. Pyelography shows whether the ureter has been kinked, with resultant dilatation of the renal pelvis as the result of operation, or whether it has been properly anchored, and is not the cause of the post-operative symptoms.

In intermittent hydronephrosis due to the temporary kinking of the ureter of a floating kidney (showing clinically the symptoms of a Ditel's crisis), the filling of the renal pelvis and ureter with collargol is an excellent method of reproducing the colicky pain experienced by the patient during the attacks, and also of demonstrating the degree of dilatation of the renal pelvis.

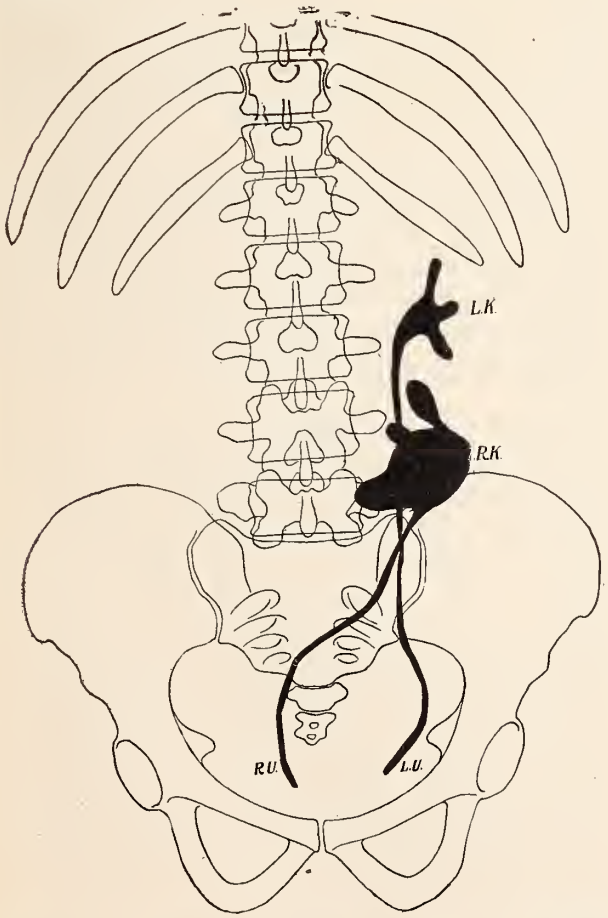


Fig. 8. Two kidneys on one side. Pelvis and ureter filled with collargol before taking radiograph. L. K. Left kidney showing normal renal pelvis. R. K. Right kidney showing hydronephrotic pelvis. L. U. Left ureter. R. U. Right ureter.

Hydronephrosis.—This term is now employed to describe the condition of dilatation of the renal pelvis proper and its calyces at the expense of the kidney tissue, with resultant atrophy of the parenchyma and stretching of the capsule. Whether the cause be pressure upon the ureter from extrinsic tumors, etc., or whether the obstruction be due to a stricture or a stone, the effects are the same. A hydronephrosis may be aseptic and present clinically only the symptoms of urinary obstruction, such as tumor, pain, etc. When infection supervenes, we speak of an infected hydronephrosis, and limit the older term pyonephrosis to the condition of destruction of the kidney tissue, as distinguished from pressure atrophy due to mechanical obstruction.

Cystoscopy and ureteral catheterization enable us to determine the source of the pus, whether renal or vesical, in a case of pyuria, but in pyelography and by our functional tests we have two quite reliable methods of determining how much kidney tissue remains, i. e., is not destroyed or compressed, and whether it may be necessary to remove the kidney.

The extent of the dilatation of the renal pelvis can be more accurately determined by pyelography than by any other method, and one can safely employ a large quantity of solution. Our experiments have shown that it requires more pressure to force collargol or cargentos into the circulation in a hydronephrotic than in a normal kidney, but one must always allow all of the solution to escape after the picture is taken, lest some toxemia result.

Renal Infections.—I would like to make these suggestions to the general practitioner in regard to infections of the kidney. First, always think of the kidney as the seat of trouble whenever you have a case of persistent or recurrent fever, in which no other focus of infection can be found. It is a common occurrence to see cases of the most severe renal infection without any signs pointing to the urinary tract. Second, have the bladder examined and the ureters catheterized when the urine contains pus, or there are symptoms of cystitis, and local treatment does not help. Third, I make it a routine practice to have radiographs made in every case of infection of the upper urinary tract. Not infrequently a calculus will be found as the source of trouble. Even when there has been no history of pain or colics, a calculus may be the cause of the obstruction, which is the predisposing factor in many cases of renal infection.

Cultures should if possible be made from the urine obtained by catheter from each kidney and one must always suspect that the renal in-

fection is of tuberculous nature, if the cultures remain sterile. In cases of persistent fever without any or few localizing signs, I have learned to look for its source in the kidney many times, with gratifying results. Whether the organisms have reached the kidney through the blood stream or by way of the lymphatics from the bladder or colon is not easy to determine and is beyond the province of the present paper. The old method of attempting to make a diagnosis of the source of pus by the variety of epithelium or the acidity or alkalinity of the urine is an obsolete theory.

Pyelography gives us valuable information as to the degree of inflammatory dilatation of the ureter and renal pelvis or of destruction of the kidney-tissue itself.

Tuberculosis of the Kidney.—We are now able to recognize this disease at an early stage i. e. when only the kidney has been affected, through the use of the cystoscope and ureteral catheter. The cystoscope will tell us whether we are dealing with a kidney or bladder disease as the source of the pus.

In many cases, the bladder changes are not specific of tuberculosis, whereas in others they are so characteristic that one can make a diagnosis from the cystoscopic examination alone, without ureteral catheterization. The latter, aided by pyelography to determine the extent of the destructive changes in the ureter and kidney is of great confirmatory value.

In the case of closed tuberculous pyonephrosis (where no communication exists to the bladder) the diagnosis by our newer methods is of course impossible and must be made by other means. Ordinary radiography is of but little aid in the diagnosis of tuberculosis of the kidney.

I can highly recommend the Forssell method in examining for tubercle bacilli in the urine. The urine is collected for twenty-four hours and then the sediment centrifuged for two or three hours before being stained.

Renal and Ureteral Calculi.—The larger my experience grows, the more do I summon the shadowgraph catheter and pyelography to my aid in the differentiation of shadows within from those external to the urinary tract.

With the exception of very soft uric acid calculi, one can say, "no shadow, no stone." In several recent cases where the history of repeated colics pointed strongly to stone in the ureter and the radiograph showed only a faint shadow, I have been able to make a positive diagnosis by inserting a shadowgraph catheter or using collargol. The latter will often show a distinct dilatation of the ureter above a calculus, or leave a deeper shadow where the stone lies.

Radiography and its more recent aids has taught us that we can often predict the location of a calculus in the kidney by its relation to bony landmarks in the radiograph, and so favored the removal of calculi through an incision in the renal pelvis (pyelotomy). Again if there is a solid cast-like shadow or many scattered ones it tells us that the whole renal pelvis is filled or that a pyonephrosis exists. The shadowgraph catheter and pyelography enable one to distinguish gallstones and similar extra-renal and extra-ureteral shadows from those in the urinary tract. Typical ureteral colics may be due to a number of different causes than stone, and it is only by the use of our modern methods that we can learn the underlying cause. When one remembers that typical renal colics may be due to stone, ureteral stricture, passage of plugs of pus or clots of blood, to tabes, kinking of the ureter, uric acid and oxalate crystals passed in large quantities and finally to nephritis we will be careful not to make a snap diagnosis.

Nothing is more embarassing than to operate with negative results, for stone just because there is a classical history or a shadow has been found. Let me urge the routine use of the shadowgraph catheter and pyelography if you wish to avoid the many pitfalls in this class of cases.

Kidney Tumors.—The cystoscope will tell one at a glance whether the bleeding has its origin in the bladder or higher up. Of course, there are many tumors which are only suspected when an enlargement is found in the kidney region. A pyelogram will soon disclose whether the abdominal tumor is of renal origin or not. If the shadow of the distended renal pelvis shows it to be of normal contour and in the usual position of the kidney, a tumor of the latter is readily excluded. If a neoplasm has invaded the renal pelvis proper or the main calyces, the pyelogram is of the greatest assistance, showing a compression of elongation of the pelvis and its calyces.

DISCUSSION.

DR. THEO. A. McGRAW, DETROIT: All that I can say is that I have been exceedingly interested in this paper of Dr. Eisendrath's and nothing would please me better than to be a young man again and take lessons from him in this particular specialty.

DR. WM. J. CASSIDY, DETROIT: In the past five years we have practically made it a standing rule in Dr. McLean's service in all intra-abdominal conditions or lesions referable to intra-abdominal organs, in which there is any douht as to

involvement of the genito-urinary system, to cystoscope and radiograph that field. You would be surprised to see how many case we have checked up when the symptoms have apparently been referable to intra-abdominal troubles—that is, gastric mainly—localizing the lesion either in the kidney, in the ureter or in the bladder, or at times in the glands in the retro-peritoneal spaces. Simple passage of the shadowgraph catbeter will not always tell you that your stone is in the ureter, for it may be a calcification of the glauds back of the ureter and you cannot localize it with sufficient definiteness or exactness to say that your stone is in the ureter. There is a certain percentage of stones which will not show with the X-ray. Pure uric acid stones will cast but a very faint shadow. If you push a stone, where there is considerable fat, especially as in the mesentery or the perinephrium, you will have a great deal of difficulty in determining your shadow, for your acid crystals are of practically the same density as your fat tissue; consequently, they will cast no more dense shadow than the tissues surrounding them. Recently, with the advent of collargol and later thorium nitrate, which is now claimed to be much more safe for the localization of stones of the ureters and pelves, if you inject especially collargol into the pelvis of the kidney or the ureter, a stone will absorb the collargol and it has been proven that this stone will retain that collargol for about one hour so that if you get a negative X-ray with the first attempt, your ureteral catheterization with your stilette catheter, and then inject the pelvis and ray it again, you will in all probability find your stone. If you do not find it on the second radiograph, make a third, after your pelvis has been emptied by the ureteral catherization, and in all probability your stone will show.. Haenisch reports that 22 per cent. of the stones in the ureter will not show. That has not been our experience. We have found practically 90 per cent. of the stones in the ureter, I do not know whether his radiographer is poor, or his patients are too stout, or his stones have been all urates. I cannot see, with the modern X-ray apparatus and with the modern tubes, why you cannot show a stone in the ureter or in the pelvis of the kidney in conjunction with your catherization in practically 90 per cent. of your cases.

As regards the question of diagnosis, especially in relation to tuberculosis: We have had this very forcibly brought to us time and time again. Patients come with a history of long-continued cystitis, they have been treated with irrigations, usually of an irritating solution, the diagnosis being simply inflammation of the bladder, nothing further being done, the patient running a temperature every evening, until when the patient presents himself the diagnosis usually carries with it the prognosis. That is, tuberculosis of the kidney is unilateral in the vast majority of the cases in the early stages, bilateral tuberculosis of the kidney is a rare condition early, and if you make your diagnosis, which can be comparatively easily done with your catheterization separately of the ureters in connection with the X-ray and the chemical tests, there is no excuse for seeing patients with unilateral tuberculosis of the kidney advance so that surgical procedures are far beyond their help. So that I wish to emphasize very, very strongly Dr. Eisendrath's remarks and I cannot say too forcibly that there should be more cystoscopes used by the surgeons in general—they should not be allowed to rust out, rather than wear out.

DR. J. J. RAYCRAFT, PETOSKEY: The one fault that I have to find is that it is a paper too learned to be followed out in detail by the men who must do this kind of work, not in Chicago, but in towns much smaller. When I see the complications shown by such pictures as we have here, not from photograph but from the picture, I doubt very much whether we can get this kind of picture and most men in this audience who will attempt to find such pictures as have been shown here on the screen will not be able to find them. I do not believe it is possible in radiographing for stones of the ureter or of the pelvis that in one-half of the cases rayed, in one-tenth of the cases rayed, that the information we get will be of decisive value. We cannot get a kidney stone picture nine times out of ten that will give satisfaction. Now, if we were to submit ourselves to this catheterization of the ureters, to this chemical that is being injected in under pressure up through the ureter into the pelvis of the kidney, it would be too much for the ordinary practitioner to go on with. I would think that the danger of perforation from too much pressure, from forcing this fluid up there might be almost as great as the danger of a laparotomy. There is nobody, I think, in this audience here who has done much of this work but will say that the ordinary opening of the abdomen where we find sufficient symptoms to warrant it should be done rather than these things which after they have been accomplished are not satisfactory in the end. These men who listen to this paper will not go home and follow it; they will go into the abdomen where they can feel the ureter, the kidney, the urinary bladder, and they can make the diagnosis and do the operation. I think this, that the gentleman from Chicago has too learned a paper for the ordinary surgeon in a small town in the State of Michigan. I was very pleased with the paper, I would be glad indeed to have the Doctor continue to give us information, which I feel is good; but, practically, I cannot go home myself and accept all of it, because I have radiographed the lower abdomen and have not found satisfactory pictures.

DR. C. D. BROOKS, DETROIT: These remarks of Dr. Raycraft would seem to me apropos in a medical meeting of twenty-five years ago and not in a modern scientific meeting of a surgical section. I do not believe that any man from Chicago can bring a paper down here on diagnosing and be too much for us. (Applause). We want more men like Dr. Elsendrath to hammer things in and if those of us who are supposed to do surgery cannot do cystoscopic work, cannot catheterize ureters and read X-ray pictures, they had better hire some one who can or send the patient to some one who can. I approve of everything that Dr. Eisendrath has said. If we cannot learn to do this sort of thing ourselves, let us have others do it for our patients.

DR. FRANK W. ROBBINS, DETROIT: Of course, we all know, Mr. Chairman, that Dr. Raycraft stirs up a discussion. He is always good at that, and I think we know the reason for which he made these remarks, and that is in order to stir up a discussion. I do not intend to speak to Dr. Raycraft's remarks, but to express my gratification at the paper that has been read and also to ask Dr. Eisendrath one or two questions, his answer to which will be of interest to me if not any one else. In the first place, I wish to ask in regard to the case he mentioned where there was a double kidney on one side and the ureters opening in their normal position from the bladder and he proved that the kidneys were on one side, his diagnosis of double kidney on that side and the ureters normal being correct. The pelves of the kidneys in that case seem to me to be normal and yet the doctor spoke of the operation and I wanted to know, in the absence of the kidney on the other side, what his operation was for, what it was?

The second point that I wish to make, the doctor has not referred to today at all, but in the answer to which Dr. Eisendrath may give an answer to some of the questions that Dr. Raycraft has brought up. It is in regard to the case that you showed me at the time of our last meeting, in Chicago, of a kidney that you had removed in which there was a tuberculous deposit about the size of half the end of my little finger and you were as proud of your diagnosis and the result, as I was proud of you. I would like to know if Dr. Raycraft or any one feeling as he does could possibly hope to make a diagnosis of that case and cure the patient except by the most advanced methods of examination, and I would like to know how in that particular case of tuberculosis of the kidney, in the very incipiency almost, you made that diagnosis?

DR. DANIEL N. EISENDRATH, CHICAGO: I am sorry, gentlemen, that my pictures could not all have been shown because they would have helped a great deal in making clear what I wanted to say, and I am sure if Dr. Raycraft came to us as an impartial judge, without any prejudice on his part, and I presented my evidence to him, that he would grant, not that every member of the profession should make a diagnosis of this kind, but, at least, and that was my object in bringing this before the state society—I gave the subject considerable thought before I brought this particular paper—that if he cannot make the diagnosis at least he should put the patient on the road toward having a diagnosis made. Now, it is not fair that the progress which we have made should be retarded by those who are not able to do the work themselves. We should be nowhere today if we did not accept of the work that has been done at some of the larger clinics in America, as you know, toward the elucidation of such problems as the diagnosis of gastric and duodenal ulcer. Not long ago, in Chicago, I heard: "I don't think that duodenal ulcer occurs in the proportion of one to a hundred compared with gastric ulcer." Did that stop the other men from working? No, and it will not stop those who are interested in this subject and who feel that their mission is to help, not the fellow surgeon alone, nor the fellow urologist, but to help the fellow practitioner.

About a year and a half ago, there was brought to me from this city a case which illustrates my point better than anything else I could mention. A young man had been suffering from gonorrhea, which could not, apparently, be cured. He kept on

having pus in his urine, his urination became more difficult, he had pain on urination, he had to get up frequently in the daytime and go out to pass his urine, he had to get up frequently at night also; he began to waste away a little bit. Local treatments for gonorrhea were of no avail. One of the men whom he consulted said: "It is impossible to make a diagnosis from the cystoscope, I don't need the cystoscope, all I need is the clinical symptoms," he made a diagnosis of tuberculosis because the tubercle bacilli were found in the urine. The patient was given tuberculin and iodoform into the bladder with absolutely no relief. He was brought to me in Chicago. I am just trying to bestow a wreath of praise upon the general practitioner who brought him, the gentleman who felt that the moment his manner of treatment was of no avail should he refuse this patient the more modern methods of investigation, should he try to keep the patient from such means of help just because he was not willing to acknowledge that other people knew something. We cystoscoped that patient. The bladder showed a few tubercles and ulcers around one ureteral orifice. What was the result? We catheterized that patient, we obtained tubercle bacilli from the one kidney. The other kidney was perfectly normal. I saw the patient some time ago and he seemed perfectly well.

Early diagnosis means this, that the diagnosis by the old policy of the general practitioner is at an end. You cannot afford to be a back number and refuse your patients the benefit of the latest and best methods of investigation whether you can make use of them or not. It is not expected that every one can make a perfect, a good radiograph. I do not know anything about taking radiographs personally. I do know that when we employ people who can take them, I can interpret them, but I do not know the technic—I do not know it in detail, in a general way I do, of course.

In regard to the point that was brought up by Dr. Cassidy of uric acid stone. I had a case in the last few weeks, a gentleman sent to me on account of repeated renal colics. We looked at that X-ray and could not see any shadow and yet we had the typical history of rena calculi from the patient. There are five or six causes of renal colic besides stone. By using one of the methods that was mentioned by Dr. Cassidy, by passing the shadowgraph catheter up there we made the shadow a little more intense, we got a beautiful shadow of a typical stone at that location and by the other method he mentions, viz., the collargol, we intensified it. He mentions the fact that collargol may be absorbed by the stone, which has come to be a very valuable addition to our knowledge. I can remember cases myself where I am positive the patients had stones and yet the X-ray did not show them, and if we only had had the method of adding the collargol to the stone it would have shown up distinctly.

In regard to the dangers of collargol that is all exaggerated. I know there have been dangers, that there have been deaths before we knew scientifically how to employ it. In the animal, we figured out the technic absolutely. We made three series of experiments. We injected collargol at a pressure of thirty millimeters; in other words, about three feet above the table. We examined the lungs, liver, spleen, everything in that animal; we found just a few drops of collargol in between the tubules and you would have to hunt in a great many cases to find them. The moment we raised the pressure to sixty or ninety millimeters, about the ordinary pressure from the syringe, that collargol would be found among the tubules and some in the lungs. When we raised it to 120, about all the pressure you can put on, collargol was forced into the tubules and between the tubules, into the lungs, liver, spleen, and that animal died in four or five minutes. If I can find one of the pictures here, a colored lantern slide, of such a lung, you can almost watch it, the lung turns absolutely black from the collargol.

In regard to the case Dr. Robbins spoke of, the double kidney: I lost the case for this reason. She had been operated on originally for extreme sepsis. I simply drained the first time, she was so thoroughly septic. The second time, when her sepsis recurred, I made up my mind to take out that kidney. When I got in and found this big hydronephrotic sac, I thought I had the entire kidney but I only had the lower half. I had omitted making a pyelograph, which I regret to this day. It was not until I brought that kidney out to the surface that I discovered that we were dealing with a double kidney, one on top of the other, and then I ligated what I thought were all the vessels, but I had missed an anomalous set and hemorrhage into the peritoneal cavity through a tear had occurred. If I had known there were two sets of vessels to this kidney, I would have found and ligated them.

Now, in regard to diagnosis of tuberculosis of kidney; Dr. Robbins wanted to know how I made my diagnosis. In that particular case, I made my diagnosis from two facts. In the first place, a girl of twenty complained of dull, aching pain over the kidneys, there was much pallor, evening temperature of 99 to 100 degress, X-rays negative, cultures of the urine negative. That is the points that I tried to bring out before; whenever you have a patient with these definite symptoms of kidney lesion and you cannot find anything in the cultures, the cultures are negative, one should then think of tuberculosis. Secondly; when the cystoscopic examination was made, the one ureter looked perfectly normal, the other one stood right out like an edematous surface, right into the bladder wall, but without any ulcerations. However, that was enough to show me that there was some form of infection going on in that one kidney and from that and finding the tubercle bacilli in the urine, I made the diagnosis.

RECENT IDEAS CONCERNING INFECTION AND IMMUNITY.*

V. C. Vaughan, Sr., M.D.
ANN ARBOR, MICH.

In order to be brief it will be necessary for me to speak somewhat dogmatically concerning the recent views concerning infection and immunity.

I may say that about two years ago Doerr of Vienna, who is the most conscientious and vigorous and reasonable opponent of the theories which I am going to give you, closed a long discussion of these theories by giving a Scotch verdict: "That they were reasonable but not proven." The last paper that he has written some one hundred and twenty pages long, and which has appeared only a few months ago—in this he says that they are true in part, so you must bear in mind that what I am going to say is at least true in part.

First, bacteria are not plants. All our text books and all of our teachers say bacteria are vegetable organisms. Now, of course, whether they are vegetable organisms or not depends upon your definition of a vegetable. We have always said that a vegetable organism is one which contains cellulose. Cellulose is the frame work of the vegetable organism. Now if this be the true distinction between vegetable and non-vegetable organisms, bacteria are not vegetable organisms. They contain no cellulose. They are purely proteins.

In the second place, there has been considerable discussion for the last twenty years as to whether bacteria are simple in structure or whether they are complicated in structure. Some say that bacteria are simple in structure. Now please bear in mind that structure can be of two kinds. There is the anatomical structure and the histological structure, and there is the chemical structure. Because bacteria are simple morphologically, it has been assumed—a pure assumption, absolutely, with no foundation in experiment whatever—that bacteria are of

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simple chemical composition. Now bacteria are not of simple composition: This there can be no doubt about; it has been worked out in various laboratories, and it is a point of great importance in considering the nature of infection. The bacterial cell is just as complicated as any cell in our own bodies. Morphologically and microscopically the bacterial cell is of course, unicellular, and that places it low in the scale of existence. Chemically it is just as complicated as the cells of the highest structures of the body. It contains just as many amino-acids, the same animo-acids, it contains the nuclein group with the same nuclein bases; it contains at least two carbohydrates arranged very much as they are in the cells of our own bodies. Now I say that this is a matter of importance because it shows that the contest between the bacterial cell and the body cell is on a pretty even footing; it is not a more complicated cell of the body overcoming the less complicated bacterial cell.

In the third place, there has been some discussion as to whether bacteria contain nuclein or whether they are nucleated substances. I think there is no doubt about the final answer that has been given to this. There is no differentiation in staining the cells for their nuclei; some say, therefore, they have no nuclei; others say—and with these others I agree—bacteria are *all* nuclei. Now I do not mean to say that there may not be an envelope—there may not be substances accumulated about the bacteria forming capsules, etc., but bacteria are essentially wholly nuclei. They take the nuclear stains just as the nuclei of differentiated cells take the stains, and they take them uniformly. Besides, the chemical analysis shows that they are composed of nuclein, because nucleic acid and the xanthin bases can be obtained from it. This is a matter of importance, because the chief function of the bacterial cell, or any other unicellular organism is to multiply, and multiplication takes place in the nuclei in nucleated tissue not in the separate nucleus, but all nuclei.

The growth of bacteria in the body does not directly cause the symptoms or lesions of the disease. You and I were taught, or at least I taught a great many of you, that the typhoid bacilli eat holes in the intestines, dig ulcers, etc., and the very interesting subject that Dr. Mix has been talking to you about so very interestingly and valuably and practically is an illustration. We used to think, did we not, that bacteria on the surface of the mucus membrane of the stomach, or the duodenum, collected for some reason and grew there and made ulcers. Now I think I understood Dr. Mix to say; anyhow, I believe that it is generally admitted, that the infection which starts the ulcer is not from the surface, but by infection throughout the blood; and another thing, duodenal and stomach ulcers can be caused by dead bacteria just as well as by living bacteria; and another thing, ulcers may be caused by other poisons than bacterial poisons. I remember, years ago, when I found in a case of arsenical poisoning a beautiful arsenical ulcer in the stomach. I said, "Why, a piece of undissolved arsenic lay on the stomach in this locality and corroded, and made this ulcer," but experiments showed me that the injection of arsenic into the blood vessel of an animal could produce gastric ulcer just as well, and indeed more frequently than administration by mouth. It is, I think—now upon this point I may be stating it too strongly—but I think it is a biological law that when a poison finds its way or is introduced into the blood or lymph, the tendency is to eliminate it into the intestinal canal, or through the skin or through the kidneys. If you give morphine hypodermically it passes into the stomach, it is reabsorbed, it again passes into the stomach. You give arsenic hypodermically, and it passes into the stomach and intestines; you inject any foreign protein—egg white—under the skin, or into the blood of an animal, and it appears within a very short time in the intestines—it is poured out there, that is a place for it to be digested, and under normal or natural conditions it is digested there, and then its digested particles absorbed. You can administer to a rabbit, hypodermically or intravenously, any amount of foreign protein, and after a few hours, after the protein has disappeared wholly from the blood, you can find it abundantly, in the bile, in the intestines and often in the skin. It is, therefore, the elimination of poisons from the blood into the alimentary canal which is more likely to cause gastric and duodenal ulcers than being infected through the surface—whether the latter ever occurs or not. You can produce a beautiful dysentery in an animal by injecting proteins into the blood—not giving it by the mouth or injecting it into the alimentary canal, but by injecting it into the blood, because it is eliminated through the intestinal walls. One of the big problems in the near future is to find out what parts of the alimentary canal are most concerned in the elimination of different poisons.

As I stated a moment ago, it is not directly

the growth and multiplication of bacteria in the body that cause the infectious diseases. Now understand—directly—because when one becomes infected—if you or I or anybody else drinks today—suppose we should swallow intentionally a culture of typhoid bacilli, we would not have typhoid fever to-day, would we, nor tomorrow; it would be somewhere from six to ten days until we had typhoid fever. During that time the typhoid bacilli would be multiplying in our bodies with fearful rapidity, would they not, and still we are well—we have no sensation of being ill at all, when the bacteria are multiplying in our bodies with almost unlimited rapidity. Or, if you want to make this more clear, take a culture of the colon bacilli and inject it into abdominal cavity of a guinea pig, and from time to time, with a sterilized needle draw out fluid from the body of the guinea pig, and you will find that the bacilli that you have injected are multiplying greatly. While the drop taken out at first may contain a few bacilli, after fifteen minutes, more, after an hour a hundred times as many, and so on; still the guinea pig is not sick. The same is true of man; the man is not sick until the period of incubation is over. The period of incubation occurs in every infectious disease. There are no symptoms during the period of incubation. Now I do not mean to say that there are not changes taking place in the body during the period of incubation, but if so we have no methods of recognizing them. The man is not ill until the body is sensitized and begins to break up the invading bacilli—then the disease begins. It is the sensitization of the body and the destruction of the invading organisms by the ferments formed in the body cells that cause the symptoms and the lesions of disease. Of course, indirectly the growth of the bacilli is responsible, but if the white of egg could grow and multiply in your body it would be just as deadly as the tetanus bacillus to prick your finger with a needle moistened with white of egg.

Now you may say these statements are rather strong, and are at variance with our general belief. Take two guinea pigs; inoculate one of them with a virulent living culture of the colon bacillus; inject into its companion the dead colon bacillus—of course you have got to inject more in the latter case, because it won't grow—but if you inject enough of the dead bacillus the animal has the same symptoms, will die in a quicker time, and shows exactly the same lesions as with the living bacillus. Again—I was so deeply interested in Dr. Mix's statements that I may be drawing frequent conclusions from the subject he talked about—take pyorrhea for instance; it is not necessary that the germs from a pus cavity in the mouth be alive; they may be dead, but there you have a protein poison almost constantly being poured into the blood and circulation, haven't you. They may not be alive; they may be dead—but it is a poison. Every case of pyorrhea is a case of the constant introduction of poison into the system, and this poison is eliminated, whether it be dead or live bacteria, and may cause gastric ulcer or duodenal ulcer, or may cause something else.

Now, a very important thing, when a foreign protein is introduced into the body, the body cells learn how to digest it and dispose of it. I laugh and tell my students that everything in this world that is alive, from a unicellular organism up to a Daniel Webster may be educated, except a thick headed boy; but one of the most interesting things that has been learned in recent investigations is that the cells of the body may be trained to do a great many things at least that they do not do naturally. We take the vaccine of smallpox, we scratch that into the child's arm—it is the same protein which causes smallpox, but modified so that it does not grow so rapidly and abundantly—and the body cells learn how to digest smallpox proteins. We take the dead typhoid bacilli and inject them into the tissue, and the body cells learn how to digest typhoid bacilli, so that in after years when the child that has been vaccinated is again exposed to smallpox, he is immune, because he has ready prepared ferments which will destroy the vaccine protein before it has time to grow and multiply, and the same thing with the typhoid.

Now I have been asked several times whether this justifies the use of vaccines in treatment of disease, and I have been quoted quite largely as opposing the use of vaccines in the treatment of disease, and I am glad to have the opportunity to say that I do preach caution in the use of vaccines, but I think the theory which I have been trying to elaborate to you shows and justifies the use of vaccines under proper conditions, and with proper precautions. For instance, wherever there is local trouble, or trouble confined largely to one tissue of the body, such as acne, I can readily understand that the injection of some of these germs which are causing the aene under the skin or into the blood may stimulate the body eells to the formation of a ferment which is diffusable, which will diffuse into the aene pustules, and into the

skin. The acne being in the skin is not touched by the blood; the person is not sensitized. If this be true, then the possibility of vaccine therapy is—no man can say how great. I have labored earnestly for a great many years to separate the sensitizing or vaccinating substance from the poisonous substance in bacteria. I have had just enough success—just those will-o'-th'-wisps that keep a man moving on and on without reaching any great degree of success. In some cases the sensitizing substance can be isolated, but as a rule I have been unable to do it. I look forward with hope still to the time when the vaccinating or sensitizing substances can be separated from the poisonous substances, and that vaccination might be of benefit.

Take, for instance, the treatment of tuberculosis. The tubercle bacillus can be easily separated into its poisonous and its sensitizing parts. You can take the sensitizing part, which is non-poisonous absolutely; you can use any amount of it you want. I have injected a gram of it into a guinea pig without any possible harm to the pig, but, so far as guinea pigs at least are concerned it does not give any immunity. You can take the poisonous part, which corresponds with tuberculin, and with that, you can establish a certain amount of tolerance, but it is only very little. I have sacrificed—I think it is no exaggeration to say—at least a thousand guinea pigs, attempting to immunize them to tuberculosis in every conceivable way. Time and again I have taken lots, sometimes small and sometimes big, of guinea pigs, inoculated with the tubercle bacillus, and have treated half of them with tuberculin and the other half with no treatment, and, taking a set of any size, it never has happened otherwise than that the treated pigs died first, and had the more extensive tuberculosis. (laughter). Now you can see I am not very enthusiastic about the use of tuberculin. I do not deny that there may be some value in establishing a certain amount of tolerance, and when we realize how poisonous some of these protein poisons are—why, I think most of you know me and will trust my veracity, but I am going to give it a fearful strain—you can prepare from one gram of casein, as I have done repeatedly, from fifteen and a fraction grains of casein, enough poison to kill eight hundred guinea pigs, injected intravenously. Now we are drinking milk all the while, and still the casein contains a poison which is in fact a poison, when one gram of casein will furnish enough to kill eight hundred guinea pigs. Of course the explanation why we are not poisoned by proteins—that is simple—all proteins, so far as we know, contain poisons too. In my own laboratory I believe the first work was done along that line. We found that pathogenic bacteria contained a poison, and then we thought we would try non-pathogenic bacteria, and we found that they contained just as much poison—just as much as the anthrax bacillus; then we tried proteids such as the albumen from the blood, and it was the same there, and then we did not know but what our Battle Creek friends were right, and that we ought to eat vegetable proteins, and we tried them, and found that they contained just as much poison, (laughter) so that it seems that all proteins contain a poisonous group.

Of course it is perfectly plain why we are not poisoned when we eat them; there are two very good reasons: In the first place, from the unbroken alimentary canal protein poisons are not absorbed, so that you might swallow any amount. And in the second place, the intestinal and alimentary digestion splits up the poisonous substance and forms inert and harmless substances out of them.

Now if what I have said be true, we will sometime soon be speaking in a general way of the albuminal diseases, and by that we would mean diseases where for any reason a foreign protein gets into the body—not into the alimentary canal, but into the body. Then we would have under albuminal diseases, of course, bacterial diseases, protozoal diseases and albuminal diseases, due to absorption from the alimentary canal, etc. This is the later tendency in the study of infectious diseases, which is coming out now a little more prominently than it has in the past.

OBSTETRICS FROM A MODERN VIEW POINT.

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The object of this paper is to draw attention to the fact that the modern obstetrician has many duties and responsibilities which were not in evidence a few decades ago, and at the same time to make a plea for better and broader obstetrics, especially in its relation to the woman during the period of gestation. I desire to place obstetrics in its proper setting in relation to the other branches of the medical sciences, and to demonstrate what a broad and fascinating field of preventive medicine presents itself

to the practitioner who approaches it from the modern viewpoint and in a scientific manner.

There have been many obstetrical cases since the first mother was delivered of her first child and man has had unlimited opportunity to observe the various phases of pregnancy and parturition in the human family as well as in the lower animals. Yet, there is probably no branch of medicine that is veiled in greater mystery than are some of the phenomena incident to the pregnant condition.

The ancient Greeks were attended by women, as were the Egyptians and Hebrews. Gods and men were only called when grave conditions arose, as when Apollo rescued the infant Aesculapius Cesarean Section being performed on the dying mother.

It is known from the early history of obstetrics that the Roman obstetricians, pupils of Hippocrates, were not familiar with the pains of labor and the instinctive or voluntary exertions of the mother; or, if they were familiar with these, theoretically they attached no value to them. The child itself was considered to have performed the labor of birth, and by his pushing forward produced the strong pains and the unrest of the mother. According to Hippocrates, it was the demand of the child for nourishment which the mother could no longer supply, which led the child to active performance. With curious strength he tore the membranes and was born by his own muscular power. The birth pain of the mother was caused by stretching of the genital organs due to the powerful exertions of the child. The followers of Hippocrates considered the vertex presentation as the only normal one and for any other position they carried out the dismembering operation with quite a complete technic.

Six hundred years later, Galen revolutionized these ideas concerning labor. He considered that the cause of the beginning of labor was ripeness of the child; he described the contractions of the body of the uterus and the dilatation of the cervix; he directed the midwife not to allow the mother to arise and sit on the "birth chair" until the os was large enough to permit the passage of the child. He considered that after the dilatation of the os it was not the work of the uterus, but that of the abdominal muscles as in urination and defecation. He instructed the midwife to keep track of the dilatation of the os by palpation. It is proven that Galen rejected the whole theory of Hippocrates, and by his animal dissections became familiar with the muscular nature of the uterus, and even differentiated transverse and longitudinal muscle bundles and the physiology of each.

This great advance in the knowledge of obstetrics was lost sight of at the time of the fall of the Roman Empire. People fell back to the old ideas of Hippocrates and it was as late as the eighteenth century before the worth of the contractions of the uterus and abdominal muscles began again to be appreciated. Galen stood out as the greatest physician and scientist of antiquity, and many centuries earlier than his colleagues he interpreted the phenomena of labor with wonderful accuracy.

The first indication of the development of obstetrics toward a place among the sciences was noted in the sixteenth century. The practice of midwifery was, for the most part, in the hands of women even after that period. A great impulse was given to the progress of obstetrics by the famous surgeon, Ambrose Pare, about the middle of the sixteenth century. From this time the doctors, and especially the surgeons, became interested in this work.

After the middle of the seventeenth century physicians began to publish reports of their interesting cases. In the early part of the eighteenth century women still did a great deal of this work but people who could afford it began to employ doctors. About the middle of the eighteenth century chairs of medicine for the study of obstetrics were established in Edinburgh and Strasburg. In 1726, symphisiotomy was instituted and about the same time the induction of premature labor was first practiced. In the nineteenth century every advance in the related sciences was applied to obstetrics but the two epochal achievements of this period were the abolition of the pains of labor and the arrest of the high mortality from puerperal fever. In 1849, Sir J. Y. Simpson put a patient to sleep with ether. Seeing that the uterine contractions continued, though the attendant pain was abolished, he proceeded to give ether in normal labor and, in November, 1847, he demonstrated the value of chloroform.

Semelweiss, an assistant in the maternity hospital in Vienna, observed that from 10 to 30 per cent. of the puerperal women died. He noted that the mortality was higher in the wards allotted to the teaching of students than in those set apart for the training of nurses. In 1847, he saw the postmortem of a young colleague who had died from a poisoned wound and the pathological appearance seemed the same as those of the woman who died of puerperal fever. He ordered that every student

should use a disinfectant of chloride of lime on the hands before attending a woman in labor. Twenty years later Lister's remarkable work in antiseptic surgery was soon followed by the application of the same principles in obstetrics.

Probably the most discussed recent achievement in obstetrics from the standpoint of the expectant mother has been the introduction of "Daemmerschlaf," or "Twilight-Sleep," when the memory of all pain, and much of the actual pain of labor, is presumably obliterated. Practically the only new thing about "Twilight-Sleep" is the memory test which is used as an index to the administration of scopolomin, and the administration of a stable and standardized preparation of the drug in proper dosage, for this drug has been employed by obstetricians and surgeons for many years.

It is obvious that in every community there will always be a certain amount of obstetrical work done, for the expectant mother is ever in our midst. Schwartz states that more than nine-tenths of pregnant women in the United States receive no prenatal care, that more than 40 per cent. of all confinements are attended by obstetricians who are not qualified to give to parturient women a full share of the safety and comforts which modern obstetrics makes possible, which ought to be the birthright of every expectant mother and every unborn child. Schwartz also states that the same or worse conditions exist the world over and that in the United States conditions are improving more rapidly than in other countries; he claims that if we were to abolish the midwife entirely without improving the training of the doctors conditions would not be materially improved.

A study of the causes of infant mortality has shown that the greatest number of infants dying under one year do not live one month, and that in many cases the causes producing this death rate are in operation before the birth of the child.

A few years ago, in the larger cities, an organized effort was made to instruct women in the hygiene of pregnancy and it seems to me that this campaign of education of expectant mothers has many possibilities and should receive the encouragement and support of every member of the medical profession.

J. Whittridge Williams has recently given statistics gathered from 10,000 mothers who came under observation in connection with the Johns Hopkins Hospital. He found that 26 per cent. of the foetal deaths were due to syphilis, while the mortality of the various toxemias were only 6.5 per cent. In the face of these statistics it is obvious that the prenatal care of a mother must cover a much wider field than that of toxemias alone. He urges that syphilis must be recognized in the mother at the earliest possible moment so that appropriate anti-syphilitic treatment can be administered. The dosage should be sufficient so that it will be transmitted to the child and a cure effected. Inasmuch as only one-fourth of the syphilitic women present observable lesions during pregnancy, the remaining three-fourths of these cases cannot be determined by ordinary examination until the dead born child shows it, or until the living child develops hereditary syphilis. Theoretically every pregnant woman should have an early Wassermann made. Williams accentuates the fact that the problem of prenatal care should have a wider field and should be under the auspices of a well regulated obstetrical department to which are attached trained obstetricians and trained social workers.

Women should be educated to consult the obstetrician just as soon as there is any reasonable evidence of the existence of pregnancy and it is at this first point of contact with the mother that the duties of the obstetrician begin. These duties must continue throughout gestation, labor, and the puerperium. A complete history should be taken and a special obstetrical record has many advantages. A thorough gynecological examination should be made to exclude ectopic pregnancy and other abnormal conditions, a pelvicetric examination should be made; blood pressure recorded; urine and blood thoroughly examined. The expectant mother should be required to report in person to the obstetrician every month during the first half of pregnancy, and more frequently during the latter half; complete records should be made of blood pressure, weight, and urinary findings. Printed directions should be given concerning diet, exercise, bathing, clothing, regulation of the bowels, sexual intercourse, care of the teeth, railroad journeys, and so forth. At the first interview I give the patient a typewritten list of directions, assuring her that ordinarily no serious accident need befall her during the period of gestation.

I insist on my obstetrical patients coming to me every month, when the blood pressure and weight are taken, the urine examined, and physical examination made if considered necessary. About six weeks before the time of expected delivery a thorough and final examination is made and an effort is made to determine by external palpation and foetometry the position and size of the foetus. Sometimes a va-

ginal examination is made. If there is any indication for it I see the patient as often as once or twice a week during the last six weeks of pregnancy.

Some excellent work has been done with the X-ray in determining the position and state of development of the foetus and a very good picture can be obtained during the last few months of pregnancy. The vertebral column, head, limbs, hands and feet can be shown. I believe that it is not at all improbable that the X-ray in the future will become a valuable diagnostic aid, especially during the later part of pregnancy.

It is a great satisfaction to be able to assure one's patient that she herself is in proper physical condition to undergo the ordeal of labor, that the position of the child is satisfactory, that its heart action is normal, and that there is no probable disproportion between the child's size and the maternal parts. If these ideal conditions are not present it certainly is the duty of the obstetrician to acquaint himself with the abnormal conditions so that he can intelligently decide upon a mode of procedure.

The early diagnosis of pregnancy is desirable. When a woman, whether married or not, gives a history of sudden cessation of menstruation it should be assumed that she is pregnant until it can be proven positively that she is not. As one's experience in obstetrical work increases the wisdom of this assumption gains greater proportion. One of the earliest physical signs noted is Hegar's which, as is well known, is detected by external and internal palpation and is based upon the fact that in early pregnancy the lower uterine segment and supra vaginal portion of the cervix are soft and elastic. The extent of this, however, may differ in women of different nationalities. I must confess that I have rarely been absolutely positive of the existence of pregnancy by the use of Hegar's sign alone.

Foetal movements may be detected as early as the third month but are not to be entirely depended upon for women who are not pregnant will affirm that they feel foetal movements, and many women advanced in pregnancy will deny the existence of them. It is said that foetal heart may be detected between the fourth and the fifth months; personally, I have noted it as early as the fifth month.

So far as I have observed Abderhalden's serum test for the diagnosis of pregnancy is still open to criticism, because it is positive in other conditions than pregnancy and I see no occasion for revising the opinion expressed by me to that effect in a former review of the subject. Engelhorn criticizes Abderhalden's method of diagnosis. He describes a cutaneous reaction which he has noted during pregnancy corresponding to von Pirquet's tubercular reaction. He uses an extract of placental tissue which he calls "Placentin." This reaction is distinct after thirty-six hours and causes a redness at the point of injection and a light brown pigmentation of the surrounding parts. He states that he can make a positive diagnosis of pregnancy as early as the seventh week. Such a test if dependable would be a valuable adjunct in the early diagnosis of pregnancy.

Esch has made use of a placental juice which he claims gives a skin reaction causing redness and swelling in twenty-four hours.

Blood Pressure.—The study of the blood pressure in pregnancy has been intersting and instructive. There has been a common impression that pregnancy causes an increase of blood pressure; this, is not, generally speaking, a fact as has been brought out by many observers. Lynch has shown that the normal blood pressure during pregnancy is about 105 mm. HG., with variations approximately between 75 mm. and 145mm. There may be a gradual rise during the last two months of pregnancy and some recession during the last week. There is no question but that, accompanying toxemia, there is in the majority of cases a marked hyper tension and the recognition of this hyper tension. should put the obstetrician on his guard.

Vaquez, writing in 1907, after ten years experience with blood pressure, states that when a blood pressure is very high convulsions will follow, claiming that eclampsia never occurs in cases of normal tension. There are cases on record, however, of extremely high blood pressure in pregnancy with no evidences of toxemia; on the other hand eclampsia may develop and produce death in cases where the blood pressure is normal. Lynch has drawn attention to the association of low blood pressure and shock following labor. This is undoubtedly an important and significant fact. Apparently two types of low blood pressure exist, one of which seems compatible with good health, while the other generally follows some acute infection or develops during the early phthisis. A short time after reading Lynch's article a pregnant woman came under my observation in whom the systolic blood pressure was persistently from 85 to 90 mm. HG. This woman had been advised by a physician that on account of the weakness of her heart she should have her labor induced. She had had two children and one

ectopic pregnancy. Her last child was still born. This patient was kept under very close observation during the entire period of gestation, and during this time the blood pressure remained constantly low. Realizing that with this low blood pressure she might be unable to endure the strain of a hard labor, she was promised that when the period of gestation was ended labor would be induced. On the 280th day accouchement force was performed under nitrous oxide and she was delivered of a living child. There was no post partem hemorrhage but the patient went into profound shock as soon as the child was born and it required most heroic stimulation to restore her. She remained in a condition of shock for several hours after the baby was born, but made an excellent recovery. Lynch has stated to me that he is more and more convinced that low blood pressure in pregnancy is indicative of a weakened ability to withstand the strain of parturition. It is of extreme importance that the blood pressure of a pregnant woman should be taken at frequent intervals and I am convinced that an extremely low blood pressure, or a blood pressure which exceeds 140 mm. in a pregnant woman, should be interpreted as a cause of considerable solicitation on the part of the obstetrician.

Tuberculosis in Pregnancy.—The concensus of opinion is that no woman with an active tuberculosis should give birth to a child. In pregnancy under normal conditions all the vital organs of the body are more or less overworked and very frequently, under normal conditions, a healthy woman will be considerably invalidated after a normal labor and puerperium.

The first few months after the birth of a child is a critical time for the mother. Every obstetrician has observed pregnant women who are tubercular who apparently keep in good condition during the period of gestation, but whose condition becomes progressively worse after the puerperium. The added demands on the organism due to pregnancy and labor have an invariable tendency to light up arrested tubercular conditions and aggravate existing ones. Furthermore a child should not nurse a tubercular mother and a high percentage of these infants die a short time after birth, and a high percentage of them never reach maturity. I take a positive stand on this question and believe that a pregnant woman who is tubercular should have pregnancy terminated just as soon as the tuberculosis is diagnosed. Furthermore a woman should have a recovery extending over at least five years before she should be advised to become pregnant. A number of cases in my own experience have forced me to this radical conclusion.

Exophthalmic Goitre.—Charcot and Kocher have ascribed to pregnancy a salutary effect upon exophthalmic goitre, but many other authorities of large experience consider the combination of the two conditions as very unfavorable. Graves disease is about eight times as common in women as in men, and while it is a fact that a woman with exophthalmic goitre is not particularly liable to become pregnant, yet such cases must occur in the practice of every obstetrician who is able to diagnose Graves disease at any early period. Recently Bernard von Beck has added a contribution based upon an unusually large amount of material. He claims that pregnancy causes an increased demand upon the thyroid, and that until the thyroid gland has become accustomed to this increase, there exist disturbances in the function of the gland which cause subjective symptoms in the first two to four months of gestation. Patients with Graves disease, whose thyroids have already been functionating excessively before conception occurred, improve subjectively during pregnancy. He claims that this is due chiefly to the absence of the menstrual cycle. Von Beck states that only during the earlier months of pregnancy when the nervous symptoms rapidly and persistently increase, should strumectomy be done. Subjective improvement usually occurs after the fifth month of pregnancy and labor is uncomplicated. In 260 cases of Graves disease in pregnancy von Beck only performed thyroidectomy in five cases, and did not interrupt pregnancy in any case.

Seitz has collected 112 cases from his own material, from literature and from circular letters. He found that the manifestations of hyperthyroidism were not affected in 40 per cent. of the cases, that a very small number even improved during pregnancy, but that about 60 per cent. were made distinctly worse by gestation. Seitz, like other observers, considers the effect upon the heart as the greatest danger. He lays great stress upon dietetic and hygienic regime, by which the greater part of the cases can be kept in fairly good condition. He considers expectant treatment as advisable during the first part of pregnancy, and only if subjective and objective symptoms grow progressively worse does he advise pregnancy to be terminated.

Supra Renal Insufficiency in Pregnancy.—It has been stated by Pedro Zuloaga that symptoms of grave supra renal insufficiency may

show themselves during pregnancy or labor. It may begin before pregnancy occurs and increases afterwards; or it may occur for the first time during pregnancy. This insufficiency of the supra renals may be produced by a villo toxemia or they may be congenitally deficient. The insufficiency may be acquired before pregnancy, which is quite compatible with good health until the added strain of pregnancy arises. Symptoms may occur as a result of the failure of the supra renals. The symptoms are asthenia, lumbo-abdominal pains, vomiting, constipation, diarrhoea, brain symptoms, and progressive cachexia and emaciation. Low blood pressure, tachycardia, and collapse may end the scene. If the diagnosis is made early opotherapy may be of benefit. Intractable vomiting may result from this condition. Zuloaga states that some cases of sudden death in pregnant women may be caused in this way. Every pregnant woman should have her arterial tension measured. Opotherapy is indicated in the treatment of these cases, and the fresh gland or adrenalin should be given. If these fail labor should be induced. Zuloaga thinks that a woman with supra-renal insufficiency should be advised to avoid pregnancy just as tubercular cases are.

The Toxemias of Pregnancy.—No subject within the field of obstetrics is of more interest or importance than that of the toxemias of pregnancy. The literature on this subject is extensive and many ingenious and intricate theories as to the cause of the condition have been advanced, but as yet the solution of the problem remains to the future. The majority of the writers are agreed that the etiological factor, whether of foetal or material origin, is identical for the toxemias of early pregnancy as well as those occurring late in its course. The difference is probably one of time and severity of toxemia, as well as extent of morbid changes resulting. An interesting theory has been advanced as to the etiology by Mayer, A. and Linser. They consider that certain toxic substances, originating from the placenta, enter the maternal circulation during pregnancy. These substances act as antigens, and are neutralized by the production of antibodies in normal cases. In some cases these antibodies are not produced, or produced in inadequate amounts, and the patient suffers from an autointoxication as evidenced by various degrees of vomiting, skin lesions, or eclampsia. Thus we may find toxic symptoms in early pregnancy disappearing later on as sufficient antibodies are found to untie with the antigens. The validity of this theory is as yet unproven and whether the choronic villae or placenta produce such an antigen is yet to be definitely decided.

From these numerous investigations, however, some practical results have been obtained. All cases of early toxemia should receive careful attention and treatment. Hyperemesis, except in the mildest form, should be considered a very serious condition; the patient should be confined to bed, and if possible all members of the family should be excluded from the room. All food by mouth should be withdrawn and nutrient enamata resorted to. Lynch has advised the use of large doses of bromide per rectum until the patient is thoroughly quited down. Normal salt solution may be given by rectum, glucose and sodium bicarbonate may be given in large doses in the form of an enema, though the utility of this procedure is questionable. Therapeutic suggestion is particularly applicable in these cases and one should impress upon the patient the gravity of interrupting pregnancy; Williams strongly advocates this method. If the vomiting ceases solid food may be resumed but no liquids should be given by mouth at this time. A large number of these cases respond to this form of treatment and these cases are classified by Williams as the neurotic type. On the other hand, if the vomiting does not cease after such careful treatment for a few days, the safest procedure is to empty the uterus as rapidly as possible for the probability is that the case is one of the true toxic type. In this type the vomiting is progressive and mental symptoms, jaundice, and vomiting of blood occur. With these symptoms well established it is frequently of but little avail to empty the uterus. The so-called reflex type of vomiting is probably a form of the neurotic type and the correction of anatomical defects cures these cases, oftentimes by suggestion. To this class of cases I am strongly tempted to include those relieved by transfusion or by the injection of the serum of a normal pregnant woman, considering the relief obtained to be due mostly to the suggestive influences of the procedure (Cases of C. K. Austin, Arthur Curtis, and many others). Unfortunately examination of the urine by ordinary methods is of little avail as many cases present no abnormality except possibly a small amount of albumen and a few casts. Williams lays great stress on the ammonia coefficient of the urine as a diagnostic point between the neurotic and toxic type of vomiting, claiming it to be much higher in the latter. This coefficient cannot be estimated except in the well equipped laboratories and so

cannot be utilized by all, but when it is possible advantage should be taken of this procedure.

Eclampsia has been called by a number of writers a "disease of theories" and is a toxemia which may assume most serious proportions. Predomal symptoms are usually observed but its onset may be sudden and occur at any stage of gestation. Successful treatment of this condition requires the greatest judgment on the part of the obstetrician. The general concensus of opinion is that we have the same etiological factor here that we have in earlier toxemias, the difference being one of time, degree of toxemia, and extent and location of pathological changes. The majority of these cases show necrosis of liver cells and kidney epithelium, while various organs may be involved. In practically all of these cases large amounts of albumen are found in the urine.

Recently Hull and Rodenburg have made investigations on animals in an attempt to determine the etiological factors in eclampsia. They observed that the pathological changes, for the most part, center about the liver and kidneys. Their working hypothesis is that eclampsia is due to an excess in the maternal circulation of the products of digestion of foetal protein. From animal experimentation they believe that eclampsia develops in the following order: an overdose of foetal elements is thrown into the circulation and is autolized with the formation of an excess of lucin; the excess of lucin injures the hepatic vessels, with subsequent thrombosis, cloudy swelling, local necrosis, and more or less autolosis of the liver cells, the renal changes are probably due in part to other products of autolosis and perhaps to protein fractions incompletely broken down by the liver. It appears from their experiments that albuminuria is an important sign since severe renal degeneration seems to be the important lesion.

Sselitzcky agrees with Schmorl in his conception of eclampsia without convulsions, basing his conclusions on the anatomical changes in the internal organs. He states that eclampsia is not a disease of any special organ but of the organism as a whole. He reports the case of a woman 35 years of age who four years after a normal delivery, showed restlessness, disturbance of vision, twitching of the face muscles, and coma; the pulse reached 140, icterus appeared, a large quantity of albumin and different forms of casts were found in the urine, anuria ensued, and the patient died of anuria and oedemia of the lungs. Post mortem examination showed parenchymatous degeneration of the heart muscle, liver enlarged with necrotic foci, venous stasis, and oedema present, kidneys large and oedematous bloody transudate in the pleural and peritoneal cavities. Microscopically there was shown to be necrosis of brain tissue, heart muscle, kidney epithelium, liver cells and lung tissue; necrosis was also found in the mammary gland, pancreas, thyroid and interstitial of the uterus. Sselitzcky has collected fifty-one cases from the literature, thirty-four of whom died. He states that the treatment of eclampsia is rapid delivery and serum treatment.

Young states that eclampsia and the albuminuria of pregnancy are due to the products of early autolosis of the placenta and that toxemias are associated with recent infarctions of the placenta, that placental infarction is due to an interference with the maternal blood supply of the parts and that it has been shown that choronic elements depend upon the maternal blood supply. The interference of blood supply which causes the infarct may occur when there are no evidences of toxemia, that is in accidental hemorrhage. The placenta is constructed so that a part of it may die and the products liberated from the dying patch may pass into the blood stream. He says that this explains the cessation of symptoms after the death of the child and the separation of the placenta, also the absence of toxemia after accidental hemorrhage when the placenta is completely detached. Whatever may be the cause of eclampsia, treatment for it is, in the majority of instances, the prompt evacuation of the uterus, and it may be possible in some instances to save both mother and child.

In the preparation of this paper I have quoted extensively from the writings of Wichmann, Schwartz, Williams, Lynch and other authorities.

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OSTEOMA OF THE FRONTAL SINUS REPORT OF A CASE.*

V. A. CHAPMAN, M.D.
MUSKEGON, MICH.

Mrs. J. age 52 consulted me on May 14, 1908. She stated that she had been having headaches for three years, since having lagrippe. Had also had trouble with eyes for about three years. Procured spectacles two years ago. Vision is failing. Right eye painful and swollen—hurts her all the while.

Patient's vision in right eye was 20-50 and by continued effort to see test type card she read nearly 20-20. With +0.50 cylinder at 160° axis the vision of right eye was 20-20. Vision in left eye was 20-100 improved to nearly 20-20 by lenses.

Some enlargement of right supraorbital ridge region was apparently bearing down upon the right eye. Correction for refractive errors was prescribed and operation for relief of pressure against globe was advised. Patient would not consent to operation.

On January 23, 1909 patient again consulted me for relief. She stated that she had headache almost constantly and sometimes very severe. The vision was practically the same as at previous examination. The right globe was markedly protruding and displaced downwards and outwards. Opthalmoscopical examination showed the arteries small and veins congested. There was no pulsation and no bruit could be detected by use of stethoscope over the frontal region of skull. Patient was advised that there was some sort of tumor growing which was pushing the eyeball outwards. That the tumor was probably in the right frontal sinus.

Operation was again advised and patient would not consent. A prescription for iodid of potash was given. I did not see patient again until October 5, 1909. She then presented herself at my office with all the symptoms more marked. Some fluctuation was noticeable on palpation over the tumor. Fluctuation appearing at such a late period after the tumor was noticed puzzled me considerably and I modified my diagnosis to include a possible cyst of some kind. Operation was again advised and patient consented.

The operation was performed at Hackley Hospital—October 6, 1909—and a large, irregular nodulated ivory bone tumor was removed from the right frontal sinus. The tumor nested in the frontal sinus and by pressure erosion had caused a small perforation of the anterior bony wall. There was considerable milky white thickened mucus about it and it was this which caused the fluctuation upon palpation.

The tumor extended from near the external angular process of the frontal bone to nearly an inch past the median line; thus extending over into the left frontal sinus. A large projection of the tumor had pushed down into the ethmoid region beneath the nasal bones. The tumor had arisen by a short pedicle springing apparently from the diploe of the skull above the frontal sinus. I regret that more care was not taken at the time of operation to try to determine more definitely just what tissue the tumor did spring from. The stress of operation at that time however took the entire attention. The outer and inner tables of the skull were widely (½ in.) separated as far up as the hair line.



Patient six years after operation. No signs of recurrence.

This cavity was lined with a greyish glistening membrane and that portion not occupied by the tumor was filled with the milky white thick mucus before mentioned.

The anterior table of the skull over all this cavity area was removed and the soft tissues replaced against posterior table to prevent any retention pocket.

The tumor is of ivory density. It measures 59 millimeters in horizontal length 40 millimeters perpendicularly and about 30 millimeters in thickness. It weighs a little less than two ounces.

There is a thin layer of bone compressed in a fissure between the left projection of the tumor and its main body. This is the portion that extended over into the left frontal sinus.

*Read before Section on Ophthalmology and Oto-Laryngology, 50th Annual Meeting, M.S.M.S., Sept., 1915

Its appearance and position indicate that it is the remains of the septum between the right and left sinuses which the tumor probably perforated and enfolded. In the photographs, which are exact size, "1" points to site where attachment was chiseled away. "2" points to two holes which were drilled into the tumor after it was exposed, and before its removal, in an attempt to determine its nature.



Concave surface of tumor conforming to outer surface of inner table of the skull. Exact size.



Exact size of tumor. The projecting pyramidal portion at left of the deep perpendicular groove was in left frontal sinus. The groove contains remnants of the septum that was originally between the frontal sinuses.

Patient made an uneventful recovery and is here before you to-day. There has been no recurrence.

The photograph was taken with patient not wearing her spectacles as I wished to show the complete site of the operation even though greater deformity appears without the spectacles than with them.

Very little is to be found in the text books concerning osteoma of the frontal sinus. Indeed, one of the most recent works on accessory sinuses does not mention it at all. In looking up the literature upon this subject, very little was found to have been published in the American journals. Bibliography, and digest of some of the articles are appended.

PFEIFFER, W. Ein von Osteom und Mukozele des Sinus frontalis mit Perforation der zerebralen Wand. *Zeitschr. f. Ohrenheilk.*, 1912, lxiv., 223-236, 2 pl.

Pfeiffer, W. A case of osteoma and mucocele of the frontal sinus with perforation of the cerebral wall. *Zeitschr. f. Ohrenheilk.*, 1912, lxiv., 223-236.

Describes a case with operation and recovery.



External surface of tumor. Exact size. Note chisel marks above the line from 1 where pedicle attachment was cut through.

Says that Boenninghaus has collected 148 authentic cases of osteoma of the accessory sinuses. In the preantiseptic era the mortality was very high, but with the introduction of asepsis, improved operative technic, recognition of the fact that osteoma is an encapsulated tumor and the adoption of Volkmann's operation, the mortality has been greatly decreased. In Boenninghaus' collection the mortality for the cases operated before 1885 was 16 per cent.; for the cases operated since that time 3 per cent. Discusses the different theories of origin and concludes that they arise from a connective tissue rudiment, and are due to anomalies of development. Virchow believed that they originated from the diploe of the frontal bone.

ZUMBASCH, A. Osteom of the Frontal Sinus

(Zur Kenntnis der Stirnhohlenosteome). *Med. Klin.*, 1914, x., 1055.

Osteomata are among the most frequent new-growths of the frontal sinus. As a rule they are pedicled tumors. There are different views as to their origin. Arnold and Tillmann assume that they originate from fetal remnants of cartilage and Rokitansky believe that they are originally enchondromata that gradually ossify. Arnold bases his opinion on the demonstration of remnants of cartilage on the surface of the osteomata examined by him. His opinion is disputed by Bornhaupt, Sprengel, Zimmermann and Vischer. In spite of the most careful examination they could not find any cartilage remnants and think the tumors are of periosteal origin. The patients themselves often give trauma as the cause of the tumor. The fact that the osteomata are almost always found between the sixteenth and twentieth years—a time during which the frontal sinuses are developing—would lead us to suppose that they do develop from fetal remnants, and are not due to chance trauma. Pfeiffer thinks they develop from connective tissue and are connected with disturbances in development. They grow slowly in the direction of least resistance and may attain great size. Cases have been known (Dolbeau, Tillmann, Wieck) in which the pedicle of the osteoma became separated from the wall of the sinus and remained as a "dead osteoma." Tillmann thinks this due to pressure atrophy and suppuration. Inflammation may take place in an osteoma and change it to a mucocele, which may become infected and transformed into a pyocele.

Only treatment is surgical. The prognosis of radical removal of osteoma was formerly very bad. According to Berlin, of sixteen patients who were operated upon for osteoma of the sinus, six died, or 38 per cent. Bornhaupt had seven deaths in eleven operations, or 63 per cent.

According to Birch-Hirschfeld, Taranto, during the period from 1850 to 1874 had forty-three cases with eight deaths, or 18.6 per cent.; from 1875 to 1890, fifty-nine cases with four deaths, or 6.77 per cent. Giese had a mortality of 50 per cent. Birch-Hirschfield, according to recent statistics a mortality of 5.79 per cent. Perthes partially removed the tumor in twelve cases with six deaths, or 50 per cent., and of twenty-one case in which it was completely removed, two died, 9.5 per cent. The cases published in recent years by Kohler, Perthes, Vischer, Pfeiffer, Post, Manasse, Payr and others all show good results. They show that the operation can be performed now almost without danger. As long as the posterior wall of the sinus and the dura are intact there is little danger of meningitis.

WEINGARTNER. A latent osteoma of the frontal sinus. (Ein latentes Osteom der Stirnhohle). *Berl. Klin. Wchnschr.*, 1914, li, 1710.

Reports one case, patient had headache in region of frontal sinus. Rontgen examination of sinus showed the tumor. The only case the author knows of in which there were no pressure symptoms and diagnosis had to be made by X-ray.

BESSEL-HAGEN, F. Osteoma of the Frontal Sinus (Zur Kenntnis der Stirnhohlenosteome). *Centralbl. f. Chir.*, 1889, xvi., 900.

Describes one case operated upon in 1888 with success; recovery. Advises early and complete removal of these tumors.

BOENNINGHAUS. Operations on the Accessory Sinuses of the Nose. (Die Operationen an den Nebenhohlen der Nase). In Handbuch der speziellen *Chirurgie des Ohres* und der oberen *Luftwege*, Wursburg, 1914. 2d ed.

Pfeiffer evidently quoted from the first edition of this work for the figures I find in Boenninghaus do not agree with those given by Pfeiffer. In Vol. III, p. 234 of this edition Boenninghaus says that he has collected 203 cases of osteomata of the accessory sinuses. In 153 of them it could not be definitely determined in which sinus the tumor began. Of the others seventy-five were osteomata of the frontal sinus. He says that 129 of these cases are described in Taranto's Paris thesis, 1901. He also gives the references for the other cases. He says the origin of these tumors is not clear, but he is inclined to believe they originate from foetal cartilage. Says the prognosis has improved greatly. Of cases before 1885, there was 16 per cent. mortality. Since 1885 only 3 per cent. mortality. Death generally occurs, when it does occur, from intracranial complications, such as meningitis and brain abscess, and generally in cases where projections of the tumor reach into the cranium.

BORNHAUPT, T. A case of left-sided osteoma of the frontal sinus. (Ein Fall von linkseitigem Stirnhohlen-Osteom). *Arch. f. klin. Chir.*, 1881, xxvi, 589-644.

Describes one case of his own, operation, recovery. Collects twenty-two other cases from the literature. Discusses theories of origin and concludes that the correct one is that which assumes that the tumors originate from remnants of foetal cartilage.

GIESE, A. A case of osteoma of the left

frontal sinus and orbit. (Ein Fall von Osteom der linken Stirnhohle und Orbita). *Diss., Kiel,* 1902, Abstract in *Zentralbl. f. Chir.,* 1902, xxix, 1331.

Describes one case, operation, recovery. From collection of cases from literature eoneludes that prognosis of these tumors in general is bad. If left to themselves they often project into the skull and cause death from compression of the brain. Formerly operation gave very bad results. He reckons from the eases reported a mortality of 50 per eent. With early operation the prognosis is much better.

Gerber. Osteomata of the Frontal Sinus. (Les osteomes du sinus frontal). *Arch. internat. de laryngol.,* 1907, xxiii, 1-17.

Says there is a good deal of confusion in the designation of tumors of this region. Many exostoses of the orbit are called osteoma of the frontal sinus and vice versa. He thinks a case may be regarded as osteoma of the frontal sinus when there is propulsion of the eyeball forward, downward and outward. When the eyeball is pushed forward only the tumor is sphenoidal or orbital. He says that eighty-seven cases of true osteoma of the frontal sinus have been published. The authors are as follows: Arnold (2), Axenfeld, Baille, Banga, Berg (2), Besselhagen, Bonnet, Bjorken, Birch-Hirschfeld, Birkitt, Bornhaupt, Bouyer, Bryant, Bush, M. Coppez, H. Coppez (5), Demarquay, Fenger, Fergusson, Friedenberg, Gerber (2), Giese, Goyanes, Haenel, Hamilton (2), Heymann, Hoffman, Holland, Jobert, Ischunin, Kammerer, Kan, Kikuzi (2), Knapp (3), Lambe (2), Laurens, Lawrence, Liares, Mackenzie, van der Meer, Mitwalsky (2) Mierendorf, Moser, Nakel, Navratil, von Oettingen, Osterlen, Paget, Poppert, Potherat, Prochnow, Renzi, Roemhild, Rokitansky, Sauteran, Seames-Spicer, Solger, de Santi, Stanley-Bogd, Tauber, Textor, Thelvall, Tillais Tillmann, Tisehow (2), Verneuil, Weiss, Williams, Witzheller, Zimmermann, Perthes, Hoppe and Hilton, and he adds in a foot-note that after the completion of his article another case was published by Perthes, making a total of eighty-eight. He excludes cases by Durnhofer, Funke, Grunhoff, Keate and Silook that are published as authentic cases in other lists. He also cites a number of other cases that he thinks are not authentie. He does not give the referenee for these cases.

He describes two cases of his own.

There are various theories as to causation. One is that these tumors are caused by trauma, another that they are of embryonie origin, a third attributes them to defective development of the frontal sinuses caused by inflammation or some mechanical eause. His own conclusions with referenee to etiology are as follows: The frontal sinuses have a marked tendency to become the seat of bone tumors, more than any other part of the skeleton. Most of these are small circumscribed exostoses, which are never perceived during life. Sometimes they develop into larger osteomata, generally solitary, more rarely multiple, which become dangerous on account of pressure. Inflammatory irritations that are capable of causing ossification of the bone or periosteum are not unusual in the frontal sinuses. These irritations may be exogenous (trauma), but more often they are internal, caused by latent, torpid sinusitis. These irritations have the maximum influence during the period of formation of the bone and during the development of the frontal sinuses. That is why most of the cases are found between 10 and 30 years of age. (My case was much later in life—52 years of age when she first sought relief from headaches).

The prognosis after operation is favorable.

Kyle, D. Braden. Text-book of Diseases of the Nose and Throat. Phila., 1914. p. 415.

"Ostcomata are rather rare and may primarily originate in the sinus or in adjaeent bony structures, involving the sinus. They tend to involve adjacent structures and to penetrate the cranium. This form of tumor is of very slow growth and if allowed to attain any considerable size produees marked faeial deformity. Tumors of the frontal sinus, whether benign or malignant, are of grave import and the prognosis is unfavorable."

The following notes on this subject are contributed by Dr. Eames, Pathologist to Hackley Hospital:

ORBITAL OSTEOMATA.

Osteomata of the orbit may form either from the periosteum of the orbit, or extend from the sinuses.

Those from the orbit are firm, irregular, nodular tumors with a dense eortex and a cancellated center. Those from the sinuses are at first confined within the cavities from which they originate. As they grow, the walls of the sinus expand, the weakest plaec gives way and the tumor bulges into the nose or even into the cranial cavity. At this stage the tumor is surrounded by the walls of the sinus in whieh it develops.

They are formed of a cancellated center and a dense cortex covered by periosteum. Later the bony wall of the cavity may become eroded

and the tumor becomes exposed to the surface or communicates with the surface by a sinus. Suppuration thus occurs and may extend to the surrounding tissues. Sometimes the tumor becomes loosened and lies like a sequestrum in the bony cavity. The growth of each type of tumor is slow. [Material from Hertzler's "Treatise on Tumors."]

LUCY N. EAMES, M.D.

Inasmuch as the given causes of these tumors are mostly histological and ascribed to foetal remnants and development, I believe that the following personal letter with which I was favored by Dr. Davis, will be of interest:

Philadelphia, August 28, 1915.

Dr. V. A. Chapman,
Muskegon, Mich.

Dear Dr. Chapman:

In reply to your letter of August 25, regarding the lining of frontal sinus cavities, I shall be very glad to give you my observations. Frontal sinuses (as are also ethmoid cells, maxillary and sphenoid sinuses) are lined by muco-periosteum. This lining is a thin membrane formed by a delicate layer of periosteum immediately covering the bone, and upon which rests a thin mucous membrane. These points can be demonstrated on microscopic examination. The periosteum and mucous membrane are so closely connected and together form such a thin membrane that we term it "muco-periosteum."

In my monograph on "The Development and Anatomy of the Nasal Accessory Sinuses" on page 20, under embryologic considerations I mention that the nasal capsule develops from the anterolateral portion of the primordial cranium. In the second month of fetal life this nasal capsule shows beginning cartilaginous development. Later in fetal life this cartilage undergoes transformation into osseous tissue. Thus what was originally perichondrium bebecomes periosteum. As mentioned on page 43, ethmoid cells frontal and maxillary sinuses have their origin from preformed grooves or furrows between the folds which develop on the lateral nasal wall. Since the frontal sinuses develop by the advancement of the pneumatization process which originally begins as invaginations in the ethmoid area and advances by resorption of the concellous bone, this same character of lining persists. You will notice on page 111 (24th line), in describing the sinus maxillaris that I speak of the lining as "muscoperiosteum." The same character of membrane, but slightly more delicate, lines the frontal sinuses.

I thank you for calling my attention to the fact that text books and references fail to give an adequate description of the membrane. Thus at some future time when I revise the monograph I shall give a more detailed description. For the immediate purpose of your paper to be read at the State Medical Society Meeting on September 1st, I hope that this information may be of some value to you. I would be pleased to have you kindly send me a reprint of your paper when it is published.

With kindest regards I am

Yours very truly,
WARREN B. DAVIS.

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ADDRESS OF CHAIRMAN OF SECTION ON OPHTHALMOLOGY AND OTO-LARYNGOLOGY OF THE MICHIGAN STATE MEDICAL SOCIETY.*

STANLEY G. MINER, M.D.
DETROIT, MICH.

Fellow Members of our Section:

In selecting me as your presiding Chairman for this meeting, our fourth anniversary, you have conferred the highest honor at your disposal, an honor of which I am most proud, and I assure you of my deepest appreciation.

It is within the province of your Presiding Officer at this time to address you either upon some scientific subject germane to our specialties, or to present some suggestive and essential propositions closely allied with our general welfare for your consideration.

It seems best to allow the program to supply the material for scientific thought and discussion, and grant your Chairman the privilege of reviewing the past and making suggestions for the future.

The basis of a successful meeting unquestionably is a good program and those of us who have had experience well know that it is usually a difficult duty to execute satisfactorily to all concerned. It is unfair to add this burden to the other numerous duties of our Secretary and as the Chairman serves for one year only, he is not familiar with the status of affairs sufficient to produce the best results. Our Section work should be of a character that will benefit and attract the members of our General Society who are interested in our special work. The subjects should be selected and handled with that in mind, and not unduly engrossed in producing a paper that is technical and ideal from the specialist's viewpoint.

A symposium on a subject of common interest to the other Sections and our own, with participants from those Sections would be of advantage to the Society in general, and our Section in particular; as for instance, Pertussis, Bronchial Asthma and Hay-Fever, could be advantageously considered in this manner.

I, therefore, most sincerely urge for your consideration the creation of a standing Program Committee of three members, one to be retired each year and his successor to be elected by the Section, or appointed by the Chairman. I have discussed this question with our experienced Secretary and he is enthusiastic in its approval.

As each specialty in medicine or surgery approaches nearer the goal of a scientific or exact basis we find the importance of correlative dependency in the etiology and treatment of disease particularly emphasized, and the unsatisfactory results of many operations easily explained as not due to lack of *finesse* in operative technic or selection, and that to obtain expected results we must recognize and have the cooperation of not only the allied specialists but the general practitioner, and even the laboratory expert as well.

Recent literature is pregnant with case citations of ophthalmic affections due to abnormal sinus and turbinal conditions, general or local toxemia and circulatory disturbances; mouth-breathing unrelieved by adenectomies and tonsillectomies, frequently because of orthodontic defections; tonsillar, pharyngal or laryngeal conditions unrelieved by treatment because of a co-existing pyorrhea alveolaris, a suppurative otitis media or a chronic sinusitis; as well as sinus thrombosis producing symptoms that place a patient in a typhoid hospital ward.

It thus seem conclusive that we must be broad in our deliberation and views, avail ourselves of the cooperation of correlative workers more frequently and establish a reciprocal confidence with our fellow practictioners that will make our work much easier and produce better results.

If we are to assume our share of the burden of preventive medicine the recognition of the orthodontist must be encouraged, and I believe the affiliation of that specialty with our Section

*September 1 and 2, 1915, Grand Rapids Michigan.

would be an act of wisdom, and result in our mutual benefit, and I sincerely ask the consideration of that question at this meeting most emphatically.

The specialist must keep up in the literature of not only general medicine and surgery, but of the allied specialties as well to obtain the best results in his work. It is as incumbent on us as upon the general practitioner that we recognize the limitations of our possibilities, and seek the cooperation of fellow workers in correlative fields. We must be ever mindful that, "In Science as in Art, there may be pause, but there can be no finality."

A review of the literature of the past year strongly impresses one with the large number of earnest workers in our special field and shows much careful thought and application of all recent ideas, and while it has given us little that is new, it has placed some of the more recent methods upon a firmer basis for general acceptance, and defined the limitations of others.

Suspension laryngoscopy has proven its value, and in making direct laryngoscopy comparatively easy Professor Killian has certainly earned the gratitude of us all. In surgery of the nasal sinuses the pendulum has swung from ultraism to conservatism, especially of the ethmoidal and frontal sinuses, the securing of drainage and local medication obtaining satisfactory results.

Vaccine and serum therapy are still on probation in all departments of medicinn with strong advocates on one side, and equally so on the other. We trust the near future will demonstrate its exact sphere of usefulness.

Throat and mouth infections have received more attention of late than heretofore, and the prevention of infection of the oral and upper respiratory tract should be given every possible consideration; particularly is this true of syphilis. My case records show in the past year seven cases of chancre of the lips and buccal cavity, all in male adults and business men, who patronize down-town lunch-rooms of the quick-serving variety for their noon-day luncheon.

Every other possible source of infection was eliminated by an unfeeling and searching investigation except the coffee-cups, drinking glasses and table ware for common use in these places. The consensus of opinion of myself and confreres, was that this possible source of infection should receive careful inspection and surveillance of our health authorities, and it would seem pertinent to our duty that we suggest some such action by a resolution of this body.

In conclusion, allow me to express on behalf of the Section our full sense of appreciation of the efforts of our industrious Secretary for the welfare of our Society the past year, and I also wish to thank each of the essayists for his generous response to calls for papers and again, I thank you for the honor conferred on me in selecting your Chairman.

DISCUSSION.

DR. STANLEY G. MINER: I would like to see some action taken on the three suggestions offered in my address. The first, concerning the Program Committee, I have talked over with the majority of our members, and they all agree that the need is very urgent. The other two are worthy of consideration. Perhaps you are not ready to decide them today or tomorrow, but I think at least a committee should be appointed to consider them. What I have in mind particularly is the affiliation of orthodontia with our Section. The committee could report and our Section then decide whether it would be wise to have such an affiliation, or simply to do as we have been doing, that is, invite members of that specialty to address us. That is for you, gentlemen, however, to decide. All I ask is that some action be taken on these recommendations; that it be not considered simply as a Chairman's Address and no attention given to it. If we are going to advance with the other Sections, those two things must be considered and disposed of according to your better judgment.

DR. E. J. BERNSTEIN, KALAMAZOO: I think the suggestions of the Chairman are very cogent and timely. The question of having a Program Committee is certainly essential to most of us, and I move that a committee of three be appointed to take that matter up, one to retire each year, so that there will always be a majority in session who are perfectly cognizant of the matter.

Another suggestion made by the President is very timely, namely, with regard to the spread of syphilis through the use of unclean eating utensils at various lunch places. I had no idea that such a large proportion of cases could be traced to that cause. Doubtless, we all realize that that is a very frequent cause of the spread of syphilis, but it seems to me that something ought to be done, and I also move that another committee be appointed to take up these various questions, and report back to the Section on some tangible method of meeting these evils.

DR. GEORGE E. FROTHINGHAM, JR., DETROIT: I agree with Dr. Bernstein, and am glad to second his motions.

THE CHAIRMAN: It has been moved by Dr. Bernstein and supported by Dr. Frothingham that a standing Program Committee of three be appointed, one to retire at each year, as recommended by the Chair; and also that another committee be appointed by the Chair to take up the other recommendations in regard to seeking or influencing legislation towards the surveillance and inspection of restaurants, with a view to preventing the spread of syphilitic infection. The suggestion was also made that a committee of three be appointed to take up the question of adding to our Section the specialty of ortbodontia. The question, then, is open to the Section for discussion.

DR. L. J. GOUX, DETROIT: The only suggestion I have to make is that instead of simply mentioning syphilis, I think it would be better to say communicable diseases.

DR. BERNSTEIN: I accept the amendment.

DR. CHARLES W. KIRKLAND, JACKSON: With respect to the third suggestion, I would say that I think that has already been disposed of by the American Medical Association. It is not possible to have dentists in affiliation with any state or local society unless they are graduates in medicine.

THE CHAIR: That would simply affect their eligibility for membership. We could invite them to address the Society, and those who were graduates in medicine could be members of the Society, and thus give them to understand that the proper disposition of any orthodontic subject should be in this Section.

(The question was put by the Chair, and carried, the Chair to appoint the three committees at a later session.)

GONORRHOEA IN PREGNANCY AND THE PUERPERIUM.

C. Hollister Judd, M.D.
DETROIT, MICH.

(From Notes of Cases at the Crittenton Hospital, where we have from 200 to 300 cases per year.)

Students of eugenics tell us that 75 per cent. of men have gonorrhoea before they are 30—more common than measles; 90 per cent. of blindness is said to be due to the presenee of this disease in the mother. The state eompels us to expect this organism in the eyes of all children at birth, and yet how frequently we forget these important facts in relation to the *mother herself,* her eare before confinement and during her puerperium. Surely in view of the great prevalence of this disease every pregnant woman should be examined in relation to this scourge of the pelvic organs of her sex. Remember, that during pregnancy, women are the most easily infected, or, if already gonorrheics, after labor is by far the most frequent time for the disease to change from a local to a general one. Spreading from the cervix to the tubes and peritoneum. We attend to the baby's eyes but forget the mother. How many cases of puerperal infection is the doetor eensored for when the husband was the real culprit?

Sanger states that 15 per cent. of women who are gonorrheics develop a gonorrheal septieemia after child birth. If not directly responsible, this organism aids very materially in the production of a mixed infection beeause of its wonderful power of lying dormant in the cervix and other glandular parts. This ability to lie dormant is much more pronounced in woman than in men. It is in this way that it produces an almost symptomless infection, perhaps giving symptoms at the menstrual periods which are so masked by the period that they are not recognized. The anatomical structure of the female pelvic viscera admits of this infeetion being in some cases almost without physieal signs. It is these symptomless cases which do so much harm and make a routine examination of the cervix desirable. This organism is ever ready to light up and do irreparable damage.

If an examination is made and gonocoeei or evidences of the disease are found, it is quite a protection to the doctor as regards the subsequent conditions of the mother. He can use his judgment in informing the husband.

Gonorrhoea in women is so markedly related to the histology of the parts involved, that a knowledge of this histology makes a description of the disease quite simple, and the treatment carried out much more logically, especially when taken in conjunction with the habits of the organism. The gonococci is essentially a surface organism, passing to the deeper layers of the tissues secondarily. It being a surface organism is the characteristic that associates it with the histology of the part involved. It prefers mucous membrane covered with columnar epithelium or ciliated columnar epithelium. When it reaches the glands of this epithelium it is quite proteeted in growth or in lieing quiescent as the case may be. Skin is quite resistant to this bacteria, being covered, as is the vagina by squamous epithelium; this fact is what makes gonorrhoea of the vagina and vulva so rare in adults. In children the layers of cells are not so numerous nor dense, hence in children the vaginal mucous-membrane is often involved. The vaginal mucous membrane has no true glands, its secretion comes from the mucous membrane.

The cervix, from its anatomical position, is often primarily infected; it represents the area of transition in the epithelium covering of the mucous membrane of the genital tract. The external os being a variable dividing line between the skin-like epithelium of the vagina and the columnar epithelium of the cervical canal.

In the cervix we also have follicles, representatives of uterine glands higher up in the uterus, many minute papillae and numerous mucous crypts the ends of which are expanded and end blindly near the museular tissue, there being no submucosa in the uterus. These mueous crypts are the glands which pour out the thick mueus so characteristic of the cervix. We often see them when retention has occurred as distention cysts. The cervix then is not only placed anatomically so that it becomes easily infected but it also contains glands which are an ideal habitat for the organism and an epithelial covering which is very vulnerable to this special baeteria. Folds in the eervix known as the arbor vitae and plicae palmatae are an additional barrier to reaching the organisms with antisepties.

Many authors eonsider the internal os as quite an effective barrier to the upward extension of the gonoeoccus. It is also frequently taught that if the infeetion reaches the eorporal endometrium the tubes will beeome involved. Neither of these statements were borne out by the series of cases under diseussion. Applying the histological reasoning to the above statements we notiee that the uterine cavity is a very good media for the extension of this organism. In the nonpregnant woman the down-

ward flow of the discharge, the strong alkalinity of the uterine cavity and the question of oxygen are likely the factors which tend to limit upward extension. These facts are in accord with the usual history of upward extension in this disease, which occurs at menstruation or in the puerperium when the above factors are absent.

A corporeal gonorrhoea gives no pathognomonic symptoms though there may be uterine tenderness and a leucorrhoea. If the gonococcus reaches the tubes it may pass into the abdominal cavity through its fimbriated end or if this be agglutinated, through the tubal walls or more rarely through the lymph or blood streams.

A one child sterility is not an infrequent accompaniment of damage to the tubal cilia. The tubes may undergo complete recovery after severe pathological changes; this is rare however if there have been repeated attacks. In the latter case both tubes will usually be affected. The urethra is often primarily infected, involvement in the series of cases mentioned was distinctly in the lower part of the canal often hardly within the grasp of the sphincter, which explains the mild urethral symptoms complained of by these patients.

Skene's glands were frequently infected, the urethral symptoms were very mild (a point of difference with male gonorrhoea) just a slight burning on urination and bladder involvement was very rare. Bladder involvement is said to be common in women but perhaps owing to hospital care it was not a frequent complication in these cases. Histologically the urethra is rather resistant except the glands, being lined with stratified squamous epithelium resting upon a basement membrane. The bladder is lined with a transitional stratified squamous epithelium (columnar cells just under the squamous). In these cases the infection followed the lines of least resistance histologically.

THE DIAGNOSIS IN PREGNANT AND NONPREGNANT CASES.

There is no question in my mind but what the clinical diagnosis is the most important. I do not mean to infer that one should neglect the bacteriological diagnosis, for it is obvious that if the special organism is found the diagnosis rests upon a more scientific basis. (It is interesting to note that the organism has been found in a normal bladder). However, if the organism is not found it must simply be considered as the lack of any other one symptom would be, and cases with all typical symptoms present are rare. A bacteriological diagnosis is not as easily carried out in women as in men. The most disappointing feature about a bacteriological diagnosis is that it is apt to fail us in chronic and symptomless cases, in other words just where we need it most and here is where a careful history should come to our rescue. It is not difficult to find the organism in acute cases nor in pregnancy, where there is a marked discharge and other symptoms of an active disease. Any treatment will make it more difficult to find the organism, also mixed infections, increase the difficulty. And it is far more difficult in women than in men owing to the swarms of different organisms in the genitals of women. Hunting for it in the urine is not very satisfactory, as it rapidly degenerates in the urine. During the puerperium the urethra and Barthylin's glands are the most likely situations to find it.

In the symptomless and chronic cases of this series; that is cases whose histories and social status made us positive that there was or had been a gonorrhoea we were often unable to find the organism after searching thoroughly six to eight films. The only abnormality in many of these unfortunates was that they would have a rather marked corporeal leucorrhea. In chronic cases and in the above class the gonococcus becomes atypical which makes it still more difficult to find. Where there is no active disease some method of irritating the mucosa so as to bring the organism to the surface, before making the film is useful, as a caustic stick, or an electrode, negative pole inserted a little way in the cervix. A cotton plug placed against the cervix; left there for many hours and then the pus secretion thus obtained will sometimes aid in a successful search.

To be identified the gonococcus must present following characteristics: coffeebean in shape, growing in pairs or groups of four or eight. It must be found intracellularly, that is in the pus or leucocyte cell. It should decolorize by Gram's stain. The pseudogonococci which are Gram negative gave us considerable trouble, especially the micrococcus catarrhalis. These Gram negative organisms can be distinguished by growing them on various media. Though the intracellular feature of the gonococcus is sufficient evidence for all ordinary purposes and when coupled with a good history or other symptoms can be considered positive. The best time to find the gonococcus is immediately after menstruation or the first few days after labor.

The appearance of a gonorrheal cervix in pregnancy is plainly characteristic, it is inflam-

ed, enlarged, and bogy. There is considerable mucopurulent discharge coupled with the glandular involvement in the cervix, urethra and perhaps of the vulvo-vaginal glands.

A discharge before pregnancy which was at one time thick and creamy, or yellow, changing to a leucorrhoea; urethral symptoms though mild. Recurrent attacks of pelvic peritonitis especially appearing after menstruation, or childbirth, are all significant factors. Recurrent peritonitis must be differentiated from appendicitis if on the right side. Of the cases under discussion the number in which enlarged tubes could be felt and yet all other symptoms had disappeared was interesting.

GONORRHOEA IN THE PEURPERIUM.

The frequency of a mild degree of fever after labor keeps us upon the alert to find the cause, especially when no vaginal examinations have been made. It is said that 15 per cent. of women who are gonorrheics will develop a true gonorrheal septicemia in the puerperium. Therefore it would seem logical that many others would develop a mild febrile reaction, especially when the situation of the dormant or active gonococci is remembered. Of course a slight amount of fever is often due to an intestinal stasis from pressure on the intestines and splanchnic nerves by the baby.

In this intestinal stasis the lower bowel may be emptied fairly well but other parts of the intestine absorb abnormal quantities of the colon bacillus and other mildly toxic organisms. You will remember that during pregnancy the intestines are pushed far up and crowded into the flanks. The baby's head impinges upon the lower part of the large intestine. The ovaries and tubes are pulled up along side of the uterus and the broad ligaments raised high in the pelvis. These anatomical changes must influence peristalsis markedly, and yet before you make a diagnosis of autoinfection do not forget, the almost ever present gonococcus. We have had no severe cases of gonorrheal septicemia at the Crittenton, in fact very little infection of any kind. Likely because of systematic hospital care, the gonorrheiacs have all done well with their labors. In nontreated cases the story would be different.

Vaginal examinations during labor should not be made without a marked indication, and in gonorrhoea this precaution is still more necessary. The gonococcus has been demonstrated in the decidua (there is a special tube to recover it in this situation) but likely the amnion and the chorion prevent its gaining entrance into the cavity of the former. The reasons for the upward trend of this disease in the puerperium are: (1) trauma, (2) presence of saprophytic organisms in all cases, (3) changes in the mixed discharges, (acid vagina, alkaline uterus which is more or less protective, now all reactions are the same). (4) The presence of blood serum which is favorable to Neisser's organism. (5) Loss of the cillia in tubes and uterus and other changes in the mucous membrane. A gonococcus which is attenuated from treatment or chronicity may be deposited from the husband and remain in various glands of the wife; this organism may remain inactive or give no symptoms that the woman could appreciate. When, however, she becomes pregnant it may be lighted-up or cause trouble in her puerperium—a simple febrile reaction or an actual gonorrheal septicemia often resulting.

Condylomata acuminata (venereal warts) grow much more rapidly during pregnancy. In one case of a nonpregnant individual they appeared in large numbers in six weeks. They are caused by irritating discharges containing the special organism or its toxins. Histologically they are exaggerated growths of the papillary layer of the skin and it is interesting to note that a columnar layer is adjacent to the papillary layer. Here again the columnar layer is affected. Gonorrheal warts may be different from those of syphilitic origin by their being smaller and pointed. The syphilitic being flat and broad.

The fever of gonorhoeal septicemia during the puerperium is usually moderate, remissions or an evening rise are not exaggerated; it is steady, and marked exacerbations are not common. The onset of the infection is usually later than a streptococcic infection, rarely before the third day and often the end of the first week.

Gonorrheal septicemia is rarely fatal though recovery is more gradual than in other puerperial infections, general maliase continuing indefinitely. The general condition of the patient is not so alarming as in streptococcic cases. If the tubes become involved the pelvic mass is apt to be high owing to the situation of the tubes, in streptococcic infection the pelvic cellular tissue involvement makes the mass lower. Pain and tenderness over the lower abdomen and tubes are constant and the mobility and lack of pain in the base of the broad ligaments and lower cervix are sometimes quite characteristic. The association of tubal involvement and one child sterility is to be noted, also the relation of gonorrheal infections to decidual and menstrual irregularities.

After a gonorrheal puerperial septicemia the lying-in period is increased more than in streptococcic infection, subinvolution is present and a soft, patulous cervix is usually found. After getting out of bed the lochia remains red, is more profuse or purulent than normal. Backache and pelvic distress are common. The menstrual flow is likely to reappear. Rheumatic pains in the puerperium are suggestive and the tendency of this disease when metastasis occurs to involve any serious membrane must be remembered. It is in this latter class of cases where the vaccines are useful. The amount of damage that can be done to the pelvic organs and yet have resolution take place is surprising, and in operative procedures this must not be lost sight of.

TREATMENT.

In office practice the most difficult part of the treatment is to be able to keep the patient under observation long enough to effect a cure. This means that she must be gradually educated in this regard, and also after her symptoms have nearly ceased, tell her she is not cured, even if they stop all-together, but that you must see her at longer intervals for some time to come.

So many women are ignorant of their condition that it makes the educational element of the treatment very tedious, but if we are not allowed sufficient time it is better not to attempt to treat them at all. It is well to vary the methods of treatment for they soon tire of a routine. They are never cured by giving them a prescription and letting them look out for themselves; continual advice, suggestions and examinations are very necessary. The indications in treatment are to kill the organism on the surface of the mucous membrane, then by some method induce the remainder of the gonococci to leave the glandular elements, when they can be rendered harmless. Penetrating drugs may be used but how far they reach into the compound tubular glands is a question. There have been small instruments devised to expel the contents of Skene's glands and probes to enter them, all of which are useful in appropriate cases.

The negative galvanic pole of an intrauterine electrode placed in the cervix will in some cases aid in clearing up an old infection, when combined with the usual antiseptics. It causes an electrolysis in the gland's fluids, bubbles forming rapidly and an upward current in the gland's contents results.

Silver salts are positively known, even in weak solutions to kill this organism, and in weak solutions it is not irritant. It may be used in from 2 to 5 per cent. solutions; its superiority over Argyrol and Protargal in killing the organism have been demonstrated very carefully by laboratory methods, as has also its greater penetrating ability. Norris has shown these points very clearly. To get nice results it requires some experience in changing the strength of this solution, increase it gradually, watch the effect upon the mucous membrane, and do not produce irritation unless you desire to. Douches unless given in sufficient amount are useless (quarts and gallons) remember that the upper part of the vagina is large enough for the baby's head and in giving solutions there must be enough to bathe the cervix and distend the vagina, so that the solution will reaeh between the deep H shaped foulds of the vagina. When able nurses give these douches you notice a great difference in the results. Iodine also ranks high in its penetrating power and is a useful drug but rather irritating. Ichthyol is also useful which its chemie contents shows. Bichloride is only fair, phenol is too irritating and non penetrating.

In pregnancy douching is clearly indicated in this disease and gives good results; we have used it at the Crittenton for years. The position of the patient during these douches is important, it should be, so arranged that the solution does not enter the uterus too much. Medication applied to the cervical canal gives good results and if used in nonpregnant women above the inner os the same care as in operative procedures should be observed. Do not use medication above the inner os unless clearly indicated and of course not at all in the pregnant.

Vaccines do not take place of local treatment but are useful in the metastatie cases, (time forbids a further discussion of this subject). Diagnosis by complement-fixation test; a symptom, rare before four weeks, should be regarded about as a one plus Wassermann.

In conclusion I wish to express my appreeiation to Dr. Wm. A. Wilson for the privilege of caring for these cases and also for his unceasing kindness and sympathy toward the many unfortunate women who come under his supervision at the Crittenton Hospital.

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ANTHRAX.

W. EARLE CHAPMAN, M.D.
CHEBOYGAN, MICH.

On October 2, 1915 at 9:30 p. m. I was called to see C., four year old daughter of C. F. at the tannery, Cheboygan, Mich. There was a small vesicle on her chin and the surrounding tissues were slightly indurated.

The father was an employe in the tannery and was at the time working in dry Chinese hides. Two days before C. had run to meet him, had been lifted to his shoulder and so carried home. The mother remembered the child having a small scratch on her chin at the time. On October 3 saw patient again and incised the region of the induration on inside of the mouth, made a blood smear which was sent to Lansing Laboratory requesting that the specimen be examined for anthrax.

On October 4, Mr. V. of the firm, asked me if I could make a microscopical examination for anthrax and not wait for the Lansing report. Accordingly, I took Mrs. Chapman, who had special work in bacteriology several years after I was in college, to the house. She found anthrax germs in the exudate, growing in long threads with swollen ends.

Dr. C. B. Tweedale was also in consultation at the time and confirmed the clinical diagnosis of anthrax. The primary lesion, having spread to the size of a quarter of a dollar, was dark red and weeping, temperature 104 deg. F. The child's face was swollen and indurated as far back as the ears down to the clavicle and up to the eyes. As soon as diagnosis was made the child was anesthetized and 60 cubic centimeters of Mulford's Anthrax Serum was injected in the median cephalic vein. Late on October 4 gave 10 cubic centimeters of serum intramuscularly. On October 5 a. m. found temperature 102 F. Three doses of serum 10 cubic centimeters each were given at intervals of seven hours. October 6 temperature slightly above normal, several secondary vesicles were forming around the edge of primary lesion.

Dr. Scarford of Bay City was called in consultation to verify the diagnosis of anthrax. The germ was readily found but had a distinctly different appearance, was more granular and not so long. At this time the child was chloroformed and a small crucial incision made in center of vesicles and tincture of iodine injected and 10 cubic centimeters of serum given intramuscularly.

On October 7 two more injections of serum were given and child's condition improved rapidly, the induration gone and the swelling rapidly disappearing. On October 8, for some unknown reason, the parents left with child, practically well, for Bay City.

WAUKESHA, THE PROUD POSSESSOR OF ANOTHER LARGE MINERAL WATER SPRING.

Several months ago while workmen were digging Moor (Mud) on the grounds of Waukesha's Wonderful Mud Bath Institution, a live Spring was discovered. Digging had to be suspended in that particular territory for several months, owing to the vast amount of water that flowed from same. In several tests made, it was found that the Spring would flow an average of 200,000 gallons in twenty-four hours. Samples of water were taken to competent chemists immediately, and it was found that the water was not only pure, but contained wonderful medicinal properties. In some instances similar to those contained in Moor used at the Bath Establishment. It is therefor evident that many of the medicinal qualities in the Mud were derived from the water that has percolated the peculiar soil perhaps for thousands of years. The Waukesha Moor Bath Co., also known as the Grand View Health Resort, is at the present time erecting a large up-to-date Spring house, where patients as well as visitors may go to drink freely of that wonderful Mineral Water. Plans are also formulated to pipe said water to the Mud Bath Establishment for use in their bath departments as well as in the fountains in various parts of the building. also the guest rooms.

Waukesha has also organized a Golf Club this year. A splendid Nine-hole Golf Course has been laid out by Golf Experts on the grounds of the Waukesha Bath Co., which are only nine blocks distant from the business center. Guests of any of the local institutions are extended the privilege of playing.

The Mud Bath Institution is making extensive preparations to care for the increase of its patronage due to all these wonderful creations, and is presently erecting an immense Solarium which will be as cozy as any in the country.

Waukesha today, with its splendid Institutions, Mineral Waters, Recreation, and Railroad facilities should have all the opportunities in the world to draw a large patronage of health seekers that have heretofore visited European Spas.

TRANSACTIONS

OF THE

Clinical Society of the University of Michigan

Stated Meeting, October 13, 1915

The President, UDO J. WILE, M.D., in the Chair
Vice President, HARRY B. SCHMIDT, M.D.
Reported by REUBEN PETERSON, M.D., Secretary

TECHNICAL IMPROVEMENT IN LANGE'S COLLOIDAL GOLD TEST. FORMALDEHYDE VAPOR METHOD, AND REPORT OF THREE CLINICAL CASES.

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In May, 1913, Miller and Levy published in the Johns Hopkins Bulletin the teehnie of Lange for making eolloidal gold and the reaetion of colloidal gold on the spinal fluid in a series of eases. Some proteids whose exaet composition and quantity are not known are found in the spinal fluid in paresis, cerebrospinal syphilis, and in non-specific meningitis in different amounts. They have, however, a rather charaeteristic reaetion with eolloidal gold. This test has been made in the State Psyehopathic Hospital in a number of cases this last year. The application of this promising test is seriously hampered by the difficulty of the preparation of the essential reagent. This has lead to an attempt to devise a method of preparation of colloidal gold simple enough to find a place in a clinical laboratory and sufficiently reliable to give the test the importance it deserves.

The technie of the original method is as follows: Only chemically clean Jena glassware is to be used. The water must be freshly double distilled. To 500 cubic eentimeters of water at 60 degrees C. are added 5 cubie eentimeters of a 1 per eent. solution of gold chloride and 5 cubic eentimeters of a 2 per eent. solution of potassium carbonate. At 96 degrees C. are added 5 cubie centimeters of a 1 per eent. solution of formaldehyde solution. The solution must be a elear red with a blue tinge, not cloudy or yellow. The test is made by making dilutions of spinal fluid in 0.4 per eent. salt solution, 1 cubie centimeter in eaeh of ten test tubes, at a strength of 1:10, 1:20, 1:40, 1:80, 1:160, 1:320, 1:640, 1:1280, 1:2560, and 1:5120, with a control of salt solution without spinal fluid. Five eubie eentimeters of eolloidal gold solution is then added to eaeh tube. The test is read by the degree of decolorization: 0, is the original red as in the eontrol; 1, is red-blue; 2, is lilae or purple; 3, is blue; 4, is pale or grey blue, and 5, is eolorless. Twenty minutes is sufficient to make the test, and the results read in a few hours. The test is interpreted by the zone of decolorization. In general paralysis the first five tubes are eompletely decolorized, the sixth, seventh, and eighth tubes show decreasing amounts of deeolorization, and the last two tubes remain unehanged. (See Fig. 1, Chart 1). In the "luetic zone." the maximum decolorization is in the third or fourth tubes, and is only partial, i. e. purple or blue, not clear. (See Fig. 1, Chart 2). In non-specific meningitis the maximum decolorization is in the sixth and seventh tubes, and is only partial. (See Fig. 1, Chart 3). The test is reeorded either by a graphie or curve, where the ordinate represents the dilution of spinal fluid and the abeissa represents the degree of deeolorization, or it is recorded by numbers where the position of the integer indicates the dilution and the value of the integer indieates the degree of decolorization.

In making the colloidal gold solution many laboratory workers have encountered mueh difficulty in getting a clear solution. The sourees of error are many and are hard to eradicate. The gold chloride and the potas-

sium carbonate may be purchased chemically pure, and being solids they will keep indefinitely without change of strength; solutions of them may be made up as needed. On the other hand, the formaldehyde is purchased as formalin, 40 per cent. formaldehyde solution, but because this is a solution of a volatile gas it decreases in strength with time and with usage, and some polymerization occurs. A bottle half full after being in the laboratory a few months has not the exact composition that it had when it was made by the manufacturer. Hence 5 cubic centimeters of a 1 per cent. solution of formalin has not a constant amount of formaldehyde, nor is the degree

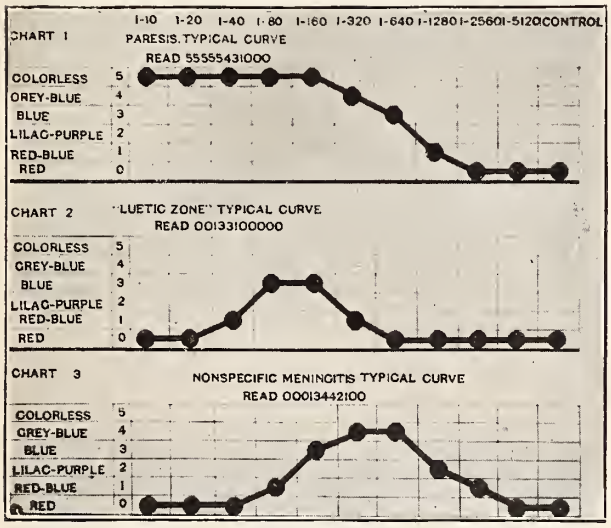


Fig. 1. Typical curves, colloidal gold.

of variability practically measurable. An added disadvantage in the use of formaldehyde in solution is that the reaction can not be controlled because the fluid being added by drops flows in irregularly and sometimes with the last few drops a precipitate or a too deep color appears. Beside the uncertainty of the actual amount of formaldehyde added to the gold and carbonate solution with the danger of excess, there is another and more important objection to the use of dilute formalin. The water used in making the 1 per cent. gold chloride solution, the water used in making the 2 per cent. potassium carbonate solution, and the 500 cubic centimeters of water used to make the colloidal gold is all freshly double distilled to reduce its ionic conductivity. The water in which the stock (40 per cent.) formaldehyde is kept is not so pure, having been in lead glass and exposed to detritus from the cork and from the air. If this relatively impure water is added to fresh double distilled water in making the 1 per cent. solution of formaldehyde, many and unknown variable impurities are added to the reaction.

To obviate the impurity of using formalin, and accepting the volumetric inexactitude of formaldehyde provided the reaction could be otherwise controlled, it was decided to use formaldehyde vapor to change the gold from the form of gold chloride to colloidal gold. Heating the formalin to liberate the formaldehyde as by fractional distillation and to carry it over through a tube into the "gold-carbonate" solution was not satisfactory because the vapor pressure of formaldehyde without steam had not force enough to cause the gas to bubble up through the "gold-carbonate" solution. Heating the formalin to produce formaldehyde gas and steam and letting these bubble up through the "gold-carbonate" solution carried over too many impurities from the water of the stock solution of formalin. Also, some of the vapor condensing in the tubes became strongly concentrated formalin, causing the reaction to proceed irregularly and often to failure. Inserting a condensor, such as a cold water jacket, made the apparatus too cumbersome for practical use in a research laboratory, although it might be satisfactory in commercial work on a large scale. The apparatus eventually devised is small, simple, easily set up and cleaned, and uniformly gives excellent results. Air from a foot bellows is pumped through the rubber tubing to a glass tube, the lower end of which is immersed two or three inches into formalin in a sealed container with a double perforated stopper. The air bubbling up through the formalin becomes charged with formaldehyde gas. The polymers are left behind. The air and gas pass through a large tube half filled with anhydrous calcium chloride and stoppered at each end with cotton and a perforated cork. The air and gas come through free from water vapor and free from mechanical impurities such as might be introduced through the bellows. (See Fig. 2).

To 500 cubic centimeters of freshly distilled water are added 60 degrees C., 5 cubic centimeters of a 1 per cent. solution of gold chloride and 5 cubic centimeters of a 2 per cent. solution of potassium carbonate, as in the original method. This "gold-carbonate" solution is then heated almost to boiling and is kept over a flame because the air bubbling through it tends to cool it. The formaldehyde gas in air is then passed through it and is controlled by the action of the bellows. The solution gradually turns from water-white to a pale blush, then to a

pink, then to a darker red with a bluish tinge. The bubbling causes sufficient agitation in the solution to keep it well mixed all the time. If the reaction is continued too long, the color turns to a dark purple or to a muddy blue. In this modification of the method of preparing colloidal gold no attempt is made to measure the amount of formaldehyde, but the reaction is guided by the color of the solution. Such solutions of colloidal gold are uniformly clear.

As illustrative of the reaction three cases at the State Psychopathic Hospital are presented. First case, Mrs. J. No. 2687, age 53. Twenty-nine years ago a sore on each cheek appeared which extended until they involved the whole nose and part of the upper jaw. She was treated



Fig. 2. Apparatus for making colloidal gold by formaldehyde vapor.

for lupus. There was a great loss of tissue with consequent deformity and much cicatrical tissue formation. (See Figs. 3 and 4). The history of this woman is not complete. A month before admission into the Hospital she had an attack during which she was unconscious, there was foam at the mouth, and the arms jerked and were very stiff. The attack lasted about ten minutes. Four days before admission there were two other attacks during which the eyes were rolled up and the arms were stiff. Two days later she had a series of attacks lasting a few hours; she covered her face or looked strangely at her husband, screamed and talked of being made of fragile glass, then remarked that that was all foolishness. These attacks showed unclearness of consciousness and fan-



Fig. 3. Case 1. Destructive gummous syphilid of the face and nares.



Fig. 4. Case 1. Destructive gummous syphilid of the face and nares.

tastic ideas with experiences resembling visual hallucinations, marked apprehension, and with yelling and disturbing the neighborhood.

The patient was referred to the Clinic of Der-

matology from which the following report was received: "A most extensive destructive lesion as the result of a gummous syphilid of the face and nares. There is considerable active process in the throat together with marked cicatrization as the result of an ulcerative syphilid in this region. An unusual feature of the case and of especial interest is the association of central nervous manifestation, as it is unusual to find this malignant type of syphilis associated with the late sequela of the nervous system."

From the Clinic of Otolaryngology the following report was received: "Marked depressions of the nose, external structures of which are intact. The throat shows rather thickened soft palate over which there is superficial ulceration; the tonsillar region, markedly injected and reddened pillars. Nasopharynx shows no evidence of bone destruction. We feel that there is no destruction of the bone at the base of the skull, but this could be verified only by X-ray examination because the interior of the nose and the epipharynx is scar tissue."

The X-ray Department reported "The definition of these plates is very imperfect, partly because of the patient's movement and partly because there is erosion of certain other structures with sclerosis of the remainder entirely destroying the usual anatomic landmark. No diagnosis."

The further physical examination also showed large scars of old healed gummata on the face, left axilla, right breast and on the buttocks, large quantities of a tenacious yellow and green substance raised by coughing, negative lung and heart findings, no adenopathy, and neither liver nor spleen enlarged.

The sense of smell was totally lost, pupils were fixed to direct and consensual light stimuli but they reacted in accommodation; generalized hypalgesia, arm reflexes increased and equal on the two sides, knee jerks much increased and equal, Achilles increased and equal, no Babinski, no Romberg, no clonus, fine tremors of the extended fingers and of the protruded tongue but not of the lips, and some inco-ordination in the finger to finger, finger to nose, and heel to knee tests. The fundus was negative.

The laboratory examinations were as follows: Urine negative. Blood count, reds 5,320,000; whites, 17,500; hemoglobin 75 per cent. The blood was four plus Wassermann. The spinal fluid was four plus Wassermann, 14 cells per cmm., Nonne-Apelt 5 plus, Nissal-Esbach 2.2 and the Alzheimer clot showed of 212 cells counted 89.2 per cent. lymphocytes including some tailed forms, 4.7 per cent. large mononuclears, 4.3 plasma cells, 0.4 reds and 1.4 epitheloid cells. The colloidal gold curve was 0013331000. (See Fig. 5, Chart 4).

While in the Hospital she had no motor attacks. She described her former attacks as like a nightmare. "We have had warnings before any of my family died. Before I was brought here I was struck for death like the frost touches the buds: something cold touched my feet like the Angel of Death. I saw some strange things, crazy like, as if we were made of glass and the thunder and lightning were going to blow us to pieces. I disturbed the neighbors by yelling. Then I'd come to myself and say, 'How foolish, for we've always been made of flesh.' My life has been very hard.

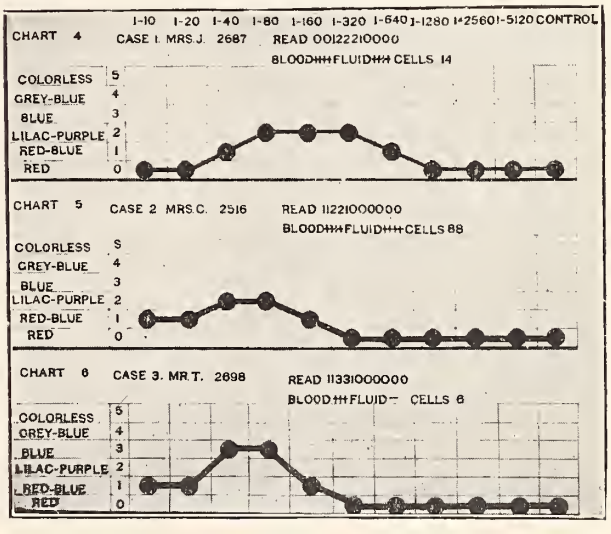


Fig. 5. Colloidal gold curves in cases 1, 2 and 3.

I suppose I'll be ready to die. I'll pray. If my time has come, He will help me pass the dark river." Her grasp was always clear. She was correctly oriented in the three spheres. She had the cheerfulness of resignation and relief, but she was not euphoric. She had remarkably good insight. There was no defect in the memory. There was no apparent deterioration.

In this case the diagnosis was syphilis, probably unlocalizable extension of the gummatous process involving the deep tissues of the face. The colloidal gold reaction was that which is so commonly found in cerebral syphilis, namely, the maximum decolorization in the luetic zone. She was transferred to the Clinic of Dermatology and later was discharged to the Social Service Department.

Second case was that of Mrs. C., age 47, No. 2516. Since she was 42 she has had many hys-

terical complaints, especially a pain in the head suggesting clavus hystericus, attacks of feeling numb and aphonia, but no convulsions. There were many mild paranoid ideas based on suspicion. She once complained of one side of the face being poisoned by soap. She was jealous and suspicious of her husband and her interests always have been self-centered. She has always shown unusual pride and ambition. She entered the Hospital the summer of 1914. At that time the physical examination showed a slight adenopathy, anemia, chronic rhinitis, left eye slightly lower than the right and a slight ptosis of the left upper eyelid; tongue protruded to the left; enlarged median lobe of the thyroid; heart and lungs negative, and an atrophic retroverted uterus.

Neurologic examination showed markedly diminished bone conduction deafness; extra-ocular movements normal except failure in convergence, pupils eccentric and sluggish, conjunctival anesthesia, pharyngeal reflex absent, marked ovarian and inframammary tenderness, coarse tremors of the extended fingers, tendon reflexes present and equal on the two sides, no clonus, no Romberg, no Babinski.

The laboratory examination showed urine negative, secondary anemia, and negative Wassermann on the blood. She complained of loss of memory and inability to concentrate. Her deafness and her lack of co-operation prevented a thorough examination. A diagnosis of conversion hysteria was made and the patient discharged.

In the interval at home she never was entirely well. Two weeks preceding re-admission in 1915 she had temporary sharp pains in the eyes. There rapidly developed a complete ptosis of the left upper eyelid which she said followed directly after an unhappy experience. Having passed the menopause she realized she could have no more children. She had become interested in the little daughter of a workman and had taken the child to a dispensary where the physician had said the girl would lose the left eye. Examination showed the hearing more diminished in the left ear than in the right, the tongue had no tremors but protruded to the left, reflexes all increased, no Babinski, left exophthalmus, very little left extra-ocular movement, left pupil smooth in outline and 5mm. in diameter, no reaction in the left pupil to direct and consensual light stimuli nor in accommodation, no disturbance in vision in the left eye when the lid is raised if the right eye is covered, and diplopia if both eyes used, and no nystagmus.

The Wassermann reactions on the blood serum of this case, as reported by Dr. Sobei Ide, are as follows:

7-23-14	Negative	—
4-16-15	Doubtful	+
5- 1-15	Four plus	++++
6-25-15	Doubtful	+
9-22-15	Two plus	++

The Wassermann reactions on the spinal fluid are:

4-16-15	Two plus	++	(not dependable—bloody)
4-26-15	Four plus	++++	
4-30-15	Four plus	++++	(bloody)
6-16-15	Negative	—	
9-24-15	Negative	—	
6-25-15	Doubtful	+	

The globulin and the total albumin always were increased as shown by the Nonne-Apelt and Nissl-Esbach tests. The cell count, when the spinal fluid was not contaminated with blood was 5-1-15, 88; 6-24-15, 13; 9-27-15, 6. The differential count of the cells by the Alzheimer clot method on 6-24-15 was in 205 cells counted, lymphocytes including both transitional and tailed forms 80.5 per cent, large mononuclears 0.8 per cent., plasma cells 6.7 per cent., epitheloid cells 1.0 per cent., macrophages 1.0 per cent., polynuclears 1.0 per cent. and fibroblasts 1.0 per cent. The colloidal gold reactions were as follows: 5-1-15, 11112220000; 6-15-15, 11221100000, 6-24-15 11221000000 (See Fig. 5, Chart 5) and 9-27-15, 00000000000.

She was very disinterested on re-admission. There was no insight, hence the medical attentions given her were regarded as superfluous. She did not co-operate, and her carelessness caused innumerable mistakes. She was irritable and stubborn. There was no defect in perception and she was oriented for person and place. There was a marked defect in retentive memory with consequent disorientation for time. No speech defect. Parallel speech was observed. She was expansive and euphoric, calling herself perfectly well and happy, and the great woman inventor. There was a childishness in her reaction to incarceration, sulky and mischievous. She never was stuporous here but told of former fainting spells. There was an element of simplicity in her thought and marked defect in her judgment. She complained of headaches in the right parietal region. She failed to respond to suggestion. She was given potassium iodide by mouth and mercury by inunction. Her mood was variable, usually she showed euphoria and intermittant irritability. As her physical condition improved and the

ptosis lifted she remained petulant and inaccessible and the consciousness continued clear. There was a questionable Ganser symptom: when asked to pronounce the typewritten words Methodist Episcopal she answered 'Met-hod-I-Saint, am I right? No? Well, Met-hod-I-street. Met-hod-I-State." There was a paranoid trend to her content of thought, her husband was neglecting her for other women, and her inventions would be stolen. After two courses of mercury inunctions her mental condition showed a marked improvement. The memory defect disappeared. She was industrious. There was no more irritability. She never acquired insight. The euphoria and the paranoid trend persisted. She was discharged improved. This case was diagnosed cerebral syphilis, gummatous meningeal type. The colloidal gold reaction was that described in cerebral syphilis as differentiated from paresis, and resembled that of the first case.

The third case is Mr. T. No. 2698, age 54. The father died at 33 of spinal meningitis and the mother at 68 of apoplexy; the family history is otherwise negative. He used alcohol moderately and tobacco to excess. He had heart and kidney trouble for twenty years. Three years ago he had severe pains in the left arm and in the left leg, and the use of these extremities was impaired. The diagnosis at that time was neuritis. In August, a year before admission, he fell unconscious on the street but no paralysis resulted. The diagnosis then was sunstroke. Within four days he was apparently normal and the pain in the left arm was gone. In September, a month later, he had a stroke of apoplexy after which he was unclear and stuporous for two weeks and dazed for the ensuing two weeks; he had difficulty in swallowing or speaking and the left side was paralyzed. In December he had an attack in which he was very unclear and stuporous for two weeks. He was dyspneic especially at night. He remained dazed until March when his condition improved. In April he had some heart attacks in which he had respiratory trouble and was delirious for short periods. Since then he has never had clear consciousness, but the degree of clouding was very variable.

The physical examination showed emaciation, anemia, marked arcus senilis and sclerotic radial arteries, generalized adenopathy, hypertrophy of the left ventricle and myocardial changes; apex two finger breadths beyond the nipple line in the fifth intercostal space, apex beat forceful and heaving but without systolic retraction, no thrill, no shock; at the base a soft blowing systolic murmur over the aortic region not transmitted to the base, aortic second sound was accentuated, the second heart sound was accentuated in the third intercostal space but no murmur was heard there, a soft blowing systolic murmur in the tricuspid region that replaced the first sound; the second tricuspid sound was accentuated; at the apex there was a soft blowing systolic murmur which had at times a musical quality which was poorly transmitted; the second sound at the apex was followed by a muffled third sound in early diastole; the blood pressure in two readings a week apart was systolic 200, diastolic 140, and systolic 180, diastolic 130. The fundus showed advanced arterial sclerotic changes, edema of the retina and retinal hemorrhages in both eyes.

The neurologic examination showed the pupils to be irregular in outline and their reaction very slow and limited to direct and consensual light stimuli and in accommodation; a generalized hyperalgesia; no tenderness on deep pressure over the nerve trunks; atrophy of the small muscles of the left hand with paresis of the first finger, no change in sensibility in the left hand, left hand grasp diminished, left wrist drop, intention tremors especially in the left hand, tendon reflexes all increased especially on the left side, in fact the neuromuscular irritability was so marked that tapping any of the muscles of the face or arms caused a visible contraction, no clonus, positive Romberg, and no tremors of the tongue and lips.

The urine was negative. No casts, no albumin, urea high normal, 0.489 urea per liter. The blood count was reds 4,480,000; whites, 12,800, of which 78 per cent. were polynuclears, 18 per cent. mononuclears, 2 per cent. eosinophiles and 2 per cent. mast cells; the hemoglobin was 85 per cent. The Wassermann reaction on the blood serum was three plus (++++). The Wassermann on the spinal fluid on June 16 was negative, with six cells. Nonne-Apelt 2, and Nisel-Esbach 2.0. However, the colloidal gold reaction was 113200000. (See Fig. 5, Chart 6). The maximum decolorization being in the luetic zone was diagnostic of cerebral syphilis, the negative Wassermann to the contrary. Therefore a week later another rachicentesis was performed. The results this time were Wassermann two plus (++), cells 3, Nonne-Apelt 5+, Nissl-Esbach 1.8, colloidal gold 1121100000, and the Alzheimer clot showed of 100 cells counted.

Lymphocytes 65.8 per cent. including tailed, disintegrated and transitional forms.
Large mononuclears 25.2 per cent.
Plasma cells 1.1 per cent.
Epithelioid cells 1.1 per cent.
Macrophagus 1.1 per cent.
Red corpuscles 2.1 per cent. These were old disintegrating forms.
Fibroblasts 1.1 per cent.
Polynuclear leucocytes 2.5 per cent.
One section showed a mass of old blood pigment that looked like a fragment of an organized clot.

A third lumbar puncture was done five days later for diagnostic purposes and to give intradurally a provocative dose of salvarsan (0.33mg.) The Wassermann was two plus (++), cells 6, and the colloidal gold was 1122110000.

The first two weeks of residence in the Hospital he was delirious. He was slightly disoriented. "Everything is yesterday." There was an unquestionable progressive memory defect. There was romancing and confabulation. The third week the delirium became more severe, the dyspnea was more marked and he was apparently moribund. He improved under digitalis. He became excited and untidy. August 25 he failed in strength, became stuporous, respiration Cheyne-Stokes, and on August 29 died.

The diagnosis was cerebrospinal syphilis, vascular type; syphilitic psychosis.

Post mortem showed the following gross pathology: edema of the extremities; heart greatly enlarged on the left side, left ventricle distended with coagulated blood, marked hypertrophy of the left ventricular walls, aortic ring dilated causing leakage of the aortic valve, cusps of the aortic valve not sclerosed, aorta enlarged between the heart and the arch and showing many thickened patches not calcified though the endothelium was ragged and denuded in patches giving a "moth-eaten" appearance; pericardial fluid much increased and of a greenish yellow color; cicatrical contractions and adhesions of the apices of both lungs, lungs well distended with air and showing no edema; all abdominal organs congested; in the head there were patches of pachymeningitis, calcified pacchionian attached to the dura; cerebrospinal fluid was so greatly increased that about eight ounces of fluid and semi-clotted blood were removed from the fossae and a large amount of clotted blood from around the base of the brain.

The microscopic pathologic findings were:

Lung.—Purulent bronchopneumonia. Chronic passive congestion. Areas of complete atelectasis. Chronic pleuritis.

Heart.—Perivascular thickening. Sclerosis of coronary moderate. Fatty infiltration subepicardium.

Bronchial Nodes.—Heavily pigmented.

Aorta.—Syphilitic aortitis. Atherosclerosis. Calcification. Thrombosis of vasa vasorum.

Spleen.—Chronic passive congestion. Atrophy. Sclerosis of arterioles.

Kidneys.—Early stage of syphilitic arteriosclerotic kidney involving outer layer of cortex. Repeated healed infarction. Passive congestion. Sclerosis of smaller arterioles. Areas of recent infarction. Some portions show the appearance of a secondary contracted kidney. Numerous hyaline casts. Syphilitic endarteritis.

Liver.—Brown atrophy. Chronic passive congestion.

Pancreas.—Slight atrophy. Sclerosis of vessels. The main pancreatic branch of the splenic shows a marked atherosclerosis with an organizing thrombus partially obliterating the vessels. Some islands of Langerhans are hypertrophic. Localized fatty necrosis throughout the gland.

Adrenals.—Marked lipoid degeneration. Thickening of capsule.

Testis.—Small patches of syphilitic orchitis fibrosa. Majority of tubules show spermatozoa.

Pathologic Diagnosis. — Acute purulent bronchopneumonia. Old syphilis. Active latent syphilis in aorta and kidney. Syphilitic aortitis. Syphilitic endarteritis in renal arteries. Early syphilitic arteriosclerotic kidney. Chronic parenchymatous nephritis. Syphilitic orchitis. Atrophy and passive congestion of all organs. General arteriosclerosis. Organized thrombus of pancreatic artery.

The neuropathologic examination was made by Dr. Albert Barrett who reports:

Brain hardened in 10 per cent. formalin. The form is well preserved. Consistency is firm. Pieces have been removed from frontal and central regions.

The brain has a length of 7.4 cubic centimeters and breath of 14.2 cubic centimeters.

The piamater is clear and thin except over the posterior part of both Frontals, along the longitudinal fissure, streaks of haziness extending from here for a few centimeters above the sulci. The pia is collapsed into the sulci. The

pia over the cisterna is clear. The right olfactory bulb is torn away.

The second and third nerves stand out clearly and show no gross alteration. The other nerves at the base are buried in a diffuse hemorrhage in the arachnoid, which is spread over the inferior surface of the medulla and the cerebellar-pontine angle. Both vertebrals and the basilar show longilar thickenings and small yellow thickenings along their course. There are ring-like thickenings through the carotids and anterior cerebrals. Section through one of these in the left vertebral shows a thickened wall and narrowed lumen. The branches of the basal arteries show small longilar thickenings. Some of the arteries of the pia show scattered yellow thickenings. Others are quite normal in appearance.

Longitudinal section through the middle of the thalamus shows a small softening in the left lenticular nucleus. There is a marked difference in the way the posterior horns extend into the occiptal region. On the left side the posterior limit of the horn is about 15 mm. On the right side the horn extends four centimeters from the posterior top. The softening in the lenticular nucleus extends one centimeter into the depth.

There are no other focal lesions.

Diagnosis.—Endarteritis, syphilitic. Arteriosclerosis of the basal and pial vessels. Diffuse hemorrhage from pia. Softening of the lenticular nucleus.

CONCLUSIONS.

Colloidal gold made with dilute formalin contains many impurities and often is not a clear solution, but when formaldehyde vapor is used the impurities are eliminated and the solution is clear. Dilute formalin is not of constant amount, polymerization occurs, and the exact amount of formaldehyde used can be only approximated; the formaldehyde by the vapor method is not measurable but the reaction can be controlled by the degree of color changes.

The colloidal gold reaction is a simple and should be a practical test. It is a good check on the Wassermann; sometimes it is more delicate than the Wassermann, and seems to offer a differential diagnosis between general paralysis and cerebral syphilis.

DISCUSSION

DR. FLOYD EARL BARTELL: This paper has been exceedingly interesting to me, and I think Dr. Hulbert is to be congratulated upon being able to obtain such clear solutions of colloidal gold. I have had occasion to attempt the preparation of such solutions myself and appreciate what it means. It might be interesting to know something about the properties of the various solutions giving colors such as have been shown here. Zsigmondy a few years ago took up the study of the size of the colloidal particles. The size of the particles of gold such as we see in the beaker before us are probably about ten to fifteen micromicrons in diameter. Colloidal gold, as has been pointed out, is a colloid, irreversible, carrying a negative electric charge. Any electrolyte having positive ions would neutralize it, producing precipitation. In looking at the colors which we have before us, in the red the particles measure about ten to fifteen micromicrons, the red violet fifteen to twenty-five micromicrons, the violet twenty-five to fifty micromicrons, the violet blue about seventy-five micromicrons, the blue about 100 to 130 micromicrons, and the gray somewhat larger. Of course the colorless solution means that the particles have grown to such a size that they have settled out and the solution is practically free from gold. In the case of the bright red solution it means that the particles are of uniform size; this explains the difficulty in producing such solutions. In this work Dr. Hulbert has used sodium chloride. A salt like magnesium chloride should be more effective in changing the color because magnesium with a valence of two, carries twice the electrical charge and probably would be nearly ten times as effective in precipitating gold. Aluminium chloride would be about one thousand times as effective as sodium chloride, aluminum having a valence of three. Of course, it means that with such solutions the gold particles would be made to change from red to blue and the various stages in between. Experiments with such control solutions would be interesting.

As has already been pointed out, we have protective colloids such as gelatin, agar agar and albumin which prevent precipitation. If such colloids were placed in a gold solution we would not get a precipitation unless we had a large amount of salt solution present. Inasmuch as we do get changes from red to blue in the test solution, it shows that the particles are growing. The question then is as to whether the color change and related curve are due to an increase in the quantity of salt, or a decrease in the quantity of the protective colloid. The peculiar thing to me in this table which has just been presented is that as we start to add the spinal fluid the gold remains red, then suddenly changes through the color scale to blue and then goes back to red again. Now if the spinal fluid contains a protective colloid, why doesn't the solution stay red for a longer time, or if it contains something which causes precipitation such as an electrolyte, why should we obtain this second red solution after we have added this greater amount of precipitating solution? Why doesn't it go immediately to blue and remain blue? This surely is an interesting problem from the chemical standpoint.

DR. DAVID M. COWIE: I think the colloidal gold test will be better understood if it is known that the reaction is based on the principles of colloidal chemistry. There are two kinds of colloidal solutions: reversible and irreversible. Reversible col-

loids are those which leave after slow evaporation a residue which is soluble in water. Such solutions are insensitive to electrolytes, that is, they are not precipitated by the addition of an electrolyte. Dextrin, gelatin, albumins and some albumoses are examples. Irreversible colloids are just the opposite. Their residue is insoluble and they are quickly precipitated by electrolytes. For example if dilute hydrochloric acid is added to this solution the red color will quickly turn to blue and a fine deposit of gold will begin to be thrown down.

If a reversible colloid solution is added to an irreversible colloid solution in proper proportion it protects the latter in such a way that the electrolytes have no effect upon it. Accordingly such colloids are called protective colloids. For example if so small amount of gelatin (a protective colloid) as 0.0001 per cent. is added to this red colloidal gold solution the addition of an electrolyte will produce no change in its color or in its physical constitution and should it be evaporated its residue will now dissolve in water.

Each reversible colloid has what is known as its gold figure which is specific, that is, it may take a lower dilution of one than another to protect. Certain albumoses, synalbumose, change colloidal gold to a blue color without the presence of an electrolyte, (NaCl in this test). The luetic process elaborates a different substance or a different quantity of it than some other process at work in the cerebrospinal system.

I became very much interested in this test sometime ago, but from the same source Dr. Hulbert got his inspiration to go ahead with the test I got my inspiration to stop. It was then thought by the Johns Hopkins workers that the test was of no practical value over other tests. Recently some work has been done which seems to show that the test may be of some greater value. These colloidal substances are of interest to pediatricians because they take cognizance of them in infant feeding. In milk we have lactalbumin, a reversible colloid, and casein, an irreversible colloid.

DR. JAMES G. VAN ZWALUWENBURG: Although I am not familiar with the colloidal end of the reaction, it strikes me that the proposed modification of the method of preparation of the colloidal gold is eminently rational and simple. Formaldehyde is an unstable product. We know of at least four condensation products which are bound to occur in a bottle which is not full. Naturally the simplest thing is to use pure formaldehyde vapor provided that the end reaction can be properly controlled. The end reaction as demonstrated is very clear. It seems to me, as Dr. Hulbert has said, that it promises to give the test its place in clinical medicine which it rightly deserves.

DR. UDO J. WILE: I should like to say that there is a practical bearing to Dr. Hulbert's paper that may not have been apparent to everyone. The cases of general paresis that are usually diagnosed as such are easy of diagnosis. So also are the cases of frank cerebrospinal syphilis. There are a number of cases, however, in which the most careful neurologic examination fails to establish a differential diagnosis between general paresis of an aberrent and an unusual type and cerebrospinal syphilis. Now when one considers that a patient with general paresis is no longer responsible and that he may be holding positions of trust and that a certain degree of watchfulness over his affairs is necessary after a diagnosis has been made, and that such care does not have to be exercised in cases of cerebrospinal syphilis, any test which would differentiate those two conditions is worthy of the greatest study and commendation. The colloidal gold test as first described was not satisfactory for the reason that the colloidal gold was a very doubtful quantity. If he has by his method eliminated this doubtful factor in diagnosis, I think Dr. Hulbert has made a very distinct advance.

DR. HULBERT: In the third case, the man who died, when we got a 3+ Wassermann on his blood, the Wassermann on his spinal fluid was negative. We did a colloidal gold test on the spinal fluid and got this chart as described here.

In our cases, so far about sixty, we have never yet found a case where the colloidal gold test did not agree with the diagnosis that we otherwise made. So in spite of the negative Wassermann at that time, we punctured this man again and at this time we got a 2+ Wassermann and the Alzheimer clot agreed with cerebrospinal syphilis.

It will be our pleasure through the next year to do the colloidal gold test on any samples of spinal fluid sent to us from this Hospital or others which will send us spinal fluid for examination.

THE EFFECT OF POTASSIUM IODIDE ON THE LUETIN REACTION.

JOHN W. SHERRICK, B.S., M.D.

Resident Obstetrician and Gynecologist, University Hospital, Ann Arbor, Michigan.

In the *Journal of the American Medical Association,* July 31, 1915, I published a preliminary report on the effect of potassium iodide on the luetin reaction. At this time I wish to bring to the attention of the Clinical Society further consideration of the same subject and take the liberty of quoting from this article.

During the past year I had the opportunity of studying the luetin reaction somewhat in detail on patients admitted to the Neurologic Service of the University Hospital. As a result of this study it was attempted to determine the value of the luetin reaction in the diagnosis of syphilis, the proper technic and the influence of various factors, such as medication, etc.

Observations were made, sometimes repeatedly, in a series of 235 cases from the Neurologic Clinic, service of Dr. C. D. Camp, for whose kindness in giving permission to use this clinical material, and for whose assistance and many suggestions I am greatly indebted. This reaction was also tested on a series of sixteen cases admitted to the Clinic for Dermatology and Syphilology, service of Dr. Udo J. Wile,

whom I wish to thank for the use of this clinical material.

I wish to thank Dr. Noguchi for his kindness in furnishing the luetin material used in these tests, also Park-Davis & Co., for luetin material furnished. The technic followed is that described by Dr. Noguchi, namely, the intradermal injection of a 1-1 dilution of luetin material with saline. The luetin material consists of a suspension of a number of strains of Treponema Pallidum grown for a period of six, twelve, twenty-four and fifty-six days on ascitic agar and ascitic bouillon at 37 degrees C. and under anerobic conditions. This material is then carefully ground to a paste which is in turn gradually diluted with the fluid until a liquid emulsion is obtained, the emulsion then being heated to 60 degrees C. for one hour and a preservative, trikersol, added. The test as used is claimed to be a cutaneous reaction for the diagnosis of syphilis in the latent and tertiary stages.

The cases were taken indiscriminately and were both luetic and non-luetic. In fact, a large percentage were non-syphilitic from every standpoint, including cases of pernicious anemia, brain tumor, hysteria, traumatic neurosis, muscular dystrophy, sciatica, chronic nephritis, neuritis, epilepsy, Grave's disease, multiple sclerosis, arteriosclerosis, disturbances of the internal secretions, et cetera. The reaction was observed on an average of from eight to ten days and in many for a period of several weeks.

A detailed report of the various factors above mentioned will be deferred to a later communication. In this report I wish to call attention to the influence which potassium iodide has upon the luetin reaction.

The fact that the administration of potassium iodide will cause a positive luetin reaction which otherwise would have been negative in non-syphilitic individuals seems not to have been discovered. Furthermore, the fact that this is indistinguishable from the reaction indicative of syphilitic infection is a matter of considerable importance to those using the luetin reaction as a means of diagnosis. If the patient suspected of being syphilitic has received potassium iodide either before, during, or shortly after the use of the test, the result is entirely unreliable. The fact that the iodides are capable of causing this reaction to the intradermal injection of luetin may throw some light on the pharmacologic action of the iodides.

Where potassium iodide is administered to patients who have undergone a luetin test, it is found that in practically every case a pustular or nodular reaction results; in this series only one has failed to respond. As a rule, relatively large doses are required to bring about this condition, on an average of twenty to thirty grains three times daily, but a great deal apparently depends on the individual's susceptibility, a positive reaction being obtained in several cases with small doses, grains ten, three times daily. This reaction is characterized by a marked areola, with redness, edema and swelling appearing in a very few hours after the injection and gradually increasing in its manifestations. There is a firm, central nodule of a bright red color raised above the surface of the skin and extending deeply; this nodule develops an area of central necrosis which, in turn, is in most cases replaced by a hemorrhagic pustule. The intensity of the reaction varies in different individuals but always goes on to the pustular stage if the drug is continued. This pustule upon discharging soon heals and marks the end of the reaction. If only small doses of potassium iodide be given, or if large doses be given for a short time, and the drug is stopped short of the pustular stage, there is a similar reaction to the iodide but no discharge, and the lesion involutes, to reappear again upon subsequent re-administration of the iodide. This has been demonstrated in several cases, and with proper manipulation I think can be obtained in practically every case.

It is interesting to note that the period elapsing between the injection of the luetin material and the ingestion of the potassium iodide may vary widely with still positive results. In one case with a negative luetin test, potassium iodide was given in small doses some two months later and the old seat of the test immediately developed an areola with a firm, red, central nodule. The potassium iodide was then discontinued and the reaction stopped short of the pustular stage and underwent complete involution. Subsequent administration of potassium iodide several weeks later resulted in a similar response. If potassium iodide is administered at the time of the injection of the luetin an intense reaction develops in from three to eight days. A similar result ensues if the patient has been receiving potassium iodide previously but even more quickly. If, however, the patient has received potassium iodide over a considerable period, but none previous to the luetin test, a positive luetin will still result if too long a time has not elapsed from the time

of the administration of the iodide. In one case a marked reaction was obtained three weeks after the potassium iodide was discontinued.

A reaction similar to the luetin can be obtained by the injection intradermally of other substances, such as agar, starch, et cetera, and administering potassium iodide. The response which agar shows to potassium iodide is more marked even than the luetin material, an intense reaction involving practically the entire surface of the arm resulting. A very thin emulsion of agar, less than 1 per cent. is injected in 0.07 cubic centimeter doses. There is a response without potassium iodide but this, in the course of a few days, involutes if not influenced by potassium iodide. A positive agar reaction with potassium iodide has been obtained by administering iodide some weeks after injecting the agar.

A thin starch emulsion, injected in the same manner, will, under the effect of potassium iodide, give a similar pustular reaction; but as yet it has not been determined the length of time after which such reaction could be obtained. Insoluble substances, of the nature of bismuth, will not give this reaction, nor will vaccines such as the gonoccocus vaccine, et cetera.

Another point of note is that the administration of other drugs which contain iodine, such as thyroid extract, will develop a reaction similar to the potassium iodide. Painting the lesion with iodine, however, does not give the reaction.

The effect of the iodides on the luetin reaction has been tested in forty-eight cases, both syphilitic and non-syphilitic, and the results obtained seem to justify the following conclusions:

CONCLUSIONS.

1. A positive pustular or nodular luetin reaction can be obtained in 99 per cent. of all cases irrespective of the presence of syphilis, by the administration of potassium iodide, either simultaneously, or shortly before, or after the intradermal test.

2. Other substances, such as agar and starch, when injected intradermally, will give a similar reaction when potassium iodide is administered, but with these substances the potassium iodide must be administered within a shorter time than is the case with the luetin.

3. Other drugs containing iodine have a similar influence on the luetin reaction.

DISCUSSION.

DR. HARRY B. SCHMIDT: I would like to ask Dr. Sherrick if he has ever tried tuberculin with iodine.

DR. SHERRICK: I have not.

DR. D. M. COWIE: I would suggest trying the emulsions of some of the other spirochetes.

DR. UDO J. WILE: I may say that I had an opportunity of seeing a number of Dr. Sherrick's tests before I knew the nature exactly of the reaction that had been performed, and I said unreservedly in two or three instances which I can remember that the reaction was a typical luetin reaction.

This work is very important and indicates very clearly the relative uselessness of this test as a clinical aid. It was hoped at the start that the luetin test would displace the Wassermann test and place in the hands of the general practitioner a very convenient way of finding out whether a patient had syphilis. Many syphilitics do react to the luetin, particularly those who are in a later stage of the disease. It is claimed that it will show up a syphilitic taint when the Wassermann will not. My first experience with luetin some years ago when it was first advocated, did not convince me that it had any advantage over the Wassermann reaction. I may say too, in regard to the character of the reaction under discussion, it has been suggested, or might suggest itself, that the skin test that Dr. Sherrick has brought out is an iododerma. It looks nothing at all like such a manifestation. Iodine gives rise to a superficial pustule. It never leaves a scar. These lesions look like tuberculides. They leave a little pigmented and atrophic scar and it would seem likely that they are due to some peculiar interaction between the iodide and the tissue itself, irrespective of the spirochete.

DR. SHERRICK: I might add that out of the 235 cases upon which this was tested, there are only two or three that I would say gave a luetin reaction which is described by Dr. Noaguchi and other men who have worked with it as typical of the reaction. We are planning this year to carry this work a little further since through the courtesy of Park, Davis & Co. we are furnished with new material in which the spirochete is grown on a new medium not containing agar agar.

PRIMARY CARCINOMA OF THE APPENDIX.

CYRENUS G. DARLING, M.D.

(From the Surgical Clinic, University Hospital, Ann Arbor, Michigan.)

Mr. H. L., age 39 years, a student, entered the University Hospital September 8, 1915, complaining of distress in the stomach and vomiting with pain in the epigastrium and lower right quadrant.

The family history is negative as regards carcinoma and lung trouble.

His personal history consists of the usual children's diseases with uneventful recoveries. He had typhoid at 30, but made a good recovery in six months.

His present trouble began about one year ago, since which time every three or four weeks he has had severe headache, sour stomach and loss of appetite. These attacks have never been accompanied by abdominal pain. The last attack similar to the former attacks, began six days before the operation.

Two days before the operation he had severe pain in the right lower quadrant which radiated to the mid line and epigastrium. Pain was present in the right lower quadrant for the first time; there was no temperature until twelve hours before the operation when there was a severe chill followed by a temperature of 100.4 degrees, pulse 118. At eight o'clock the same evening the temperature was 98 degrees, and the pulse 68. A diagnosis of appendicitis was made and immediate operation advised.

The appendix was found free from marked outward appearance of inflammation and except for the club shaped free end probably would not have been considered diseased.

The meso appendix was slightly thickened and the lymphatic nodes were not sufficiently enlarged to attract attention. The appendix was removed in the usual way and when opened showed a cyst-like cavity at the tip one-half by one-quarter inch in size, which was filled with a mucous secretion. This was entirely closed off from the remainder of the canal by a thick barrier of hard tissue. Beyond this point the mucous membrane was very red and congested. The muscular and connective tissue layers were much thickened over the cystic part, but nearly normal over the remainder of the appendix.

According to the usual custom the specimen was sent to the pathological laboratory and Dr. Warthin returned the following report: "Primary carcinoma of the appendix of the type peculiar to the appendix. Infiltration extends into the meso appendix. The prognosis in this type of carcinoma may be considered good as a relatively large proportion of the cases reported have apparently recovered, going for a long time after operation without a recurrence. Such a case we had in Dr. Peterson's clinic some years ago. As the meso appendix is extensively infiltrated, I would advise a second operation with the dissection of the neighboring lymphatic tract and the removal of any mesenteric nodes that might seem enlarged. The prognosis then, I would consider relatively good."

Following the advice of Dr. Warthin a second operation was performed and a careful search made for any enlarged lymphatic nodes. Only two were found, one above the iliocecal junction, and another in the meso appendix. Both were removed. While some of the meso appendix was removed it did not show any change except such as would be seen in the process of repair. The material from the second operation was also sent to the pathologist who reported that lymph nodes showed no metastasis. He considered the prognosis relatively quite good.

The diagnosis of carcinoma of the appendix is rarely made before operation and in this case not until the pathologist examined the specimen.

Emil Reis reports a case found by accident while operating for another condition, and mentions another described by Watkins which had a mucous cyst distending the end of the appendix.

DISCUSSION.

DR. REUBEN PETERSON: Not knowing the nature of the case report to be given by Dr. Darling, naturally I didn't look up the case referred to by Dr. Warthin. My recollections of the case, however, are that it was discovered in the same way as was this case, through the routine examination in the laboratory. I think it occurred at the time I was removing every appendix when the abdomen was opened, and that the report came back that this particular specimen showed carcinoma. The patient as I remember was not reoperated upon but whether there has been a recurrence in the case I don't know. With the Society's permission, I will look up the case and add it to Dr. Darling's case report so as to put on record another case of carcinoma of the appendix.

I think the large majority of these cases will be discovered in just this way. Early in the disease there will be no clinical symptoms to enable us to make a diagnosis prior to operation. Late cases will be considered carcinoma of the cecum. It is very fortunate that the lymphatic supply of the appendix is such that extension from the primary focus is usually very slow.

The case referred to by Dr. Warthin was reported by him in the December number of the *Physician and Surgeon*, 1906, under the title: "Primary basal-celled carcinoma of the appendix; Report of a new case with some observations bearing upon its histogenesis."

"The clinical history of the case previous to the operation is without any definite bearing upon the pathologic condition: Mrs. B. G., aged 32, married eight years and has one child, now twenty-two months old. Her trouble began about nine months ago with swelling of the elbow diagnosed as 'periostitis.' A few months after this she began to have pain in right inguinal region and then noticed pus in her urine. Micturition was painful.

but the flow of pus was not constant and gradually diminished. A clinical diagnosis of pustube was made and she was operated upon by Dr. Peterson on August 5, 1903. A mass of adhesions was found about the right tube and ovary, involving the appendix, cecum and small intestine. The appendix was freed from the adhesions and removed. An abscess containing about an ounce of pus was present in the right ovary, and this organ in connection with the right tube removed. The patient recovered from the operation, and a few months ago was reported as perfectly well."

Microscopic examination of the appendix showed it to be the seat of a primary basal-celled carcinoma of the appendix. The following extract is of interest since I have learned that the patient twelve years after the operation is in good health with no signs of recurrence:

"Toward the proximal end the appendix as a whole became somewhat constricted, the lumen much smaller but obliterated in the same way with fibrous connective-tissue trabeculae containing cell-nests as in the middle and distal portions. At the extreme proximal end the tumor nests were fewer and smaller, but persisted to the last section. It is, therefore, probable that the growth extended as far as the cecum but as the patient has for three years shown no signs of intestinal involvement such an extension into the cecal wall may not have taken place. On the other hand, there is still a possibility of a future invasion of the cecum from the stump of the appendix."

In conclusion Warthin says:

"It has been suggested recently that primary carcinoma of the appendix probably plays an important part in the origin of carcinoma of the cecum. I think this is doubtful in so far as the basal-celled variety is concerned, and this form, as has been shown, is by far the most common neoplasm of the appendix. The columnar-celled type may play such a role.

"In conclusion, the great majority of primary neoplasms of the appendix represent a specific type of carcinoma corresponding histologically to the basal-celled carcinomas of the skin, and are relatively of slight malignancy, having little tendency to metastasis and recurrence after operation. While not common, their rarity is evidently exaggerated. They occur most frequently in early life—before the fortieth year. A good prognosis may be given in cases of this type. Their etiology is to be referred to a neoplasia occurring in epithelium snared off during the process of repair in chronic appendicitis, or to a neoplasia of aberrant epithelium in the wall of the appendix."

DR. WALTER A. HOYT: Dr. Darling spoke about the percentage of these cases which have been reported. In the Annals of Surgery for May, 1914 there appears a report from the Mayo Clinic of over 8,000 appendectomies, with forty cases of primary carcinoma of the appendix. Out of these forty cases, only five times was it possible to palpate a mass in the right side before operation. This gave a .44 per cent. In this series of cases the youngest patient was five years of age. What seems to me most important in this report is the fact that between 90 and 95 per cent. of the cases occurred in obliterative appendicitis, and usually in the tip. In this series one out of every 225 cases of appendectomies showed carcinoma and taking the series of obliterative appendicitis, one out of every thirty-five showed primary carcinoma of the apendix. This, it seems to me, is very important in the diagnosis. In the Surgical Clinic since I have been here there have been three cases. Dr. Darling says he knows of no other prior cases. So our percentage since I have been here would be about .07 per cent. These cases apparently are much more common in the female than in the male.

There is also in the last Annals of Surgery a report of four cases made at a meeting of the New York Surgical Society in which there was a recurrence in two cases out of the four. Two cases were quite far advanced. One of the cases here in the University Hospital showed a palpable mass in the right side. Examination showed a large carcinoma of the appendix. This man returned two months later with secondary carcinoma.

DR. DARLING: I merely want to say a word in regard to the points brought out by the discussion. One is that the evidence with regard to the relative frequency of carcinoma in obliterative appendicitis is very misleading. There is a natural tendency for the appendix to be obliterated without serious symptoms so that comparatively few cases of this type will be operated upon and those operated will come in the period of life when carcinoma is most likely to appear. So I think that those of us who may have obliterated appendicitis ought not to feel that this report is as terrible as it appears.

A CASE OF CONGENITAL CYST OF THE STOMACH.

WILLIAM LYON, M.D.
JACKSON, MICH.

Baby L., female, was born at the Jackson City Hospital, June 21, 1915. She weighed seven pounds at birth and seemed quite vigorous. The infant began vomiting early in the morning of the 23rd and continued to vomit frequently until leaving the hospital on July 1 when she was taken away for adoption. She had nursed poorly and did not seem to thrive at all. The baby was re-admitted to the hospital the morning of July 9 and weighed five and three-quarters pounds at this time.

I first saw the infant on July 10. She was very stupid and lifeless, refusing all food and water and vomiting frequently a dark brownish liquid, thick with mucus. The bowels had usually moved each day and the stools were always dark.

Examination showed a very pale, flabby body, respiration shallow and irregular, pulse about sixty and very feeble. Examination of the abdomen revealed a mass larger than a goose egg lying in the upper half, freely movable to almost any position, very tense and giving

a feeling of fluctuation. Use of the stomach tube with lavage did not affect the mass at all and delivered nothing but a small amount of brownish mucus.

Diagnosis of a cyst was made and puncture with a trocar was followed by the escape of nearly four ounces of clear, glairy fluid, the last of which was quite thick, the empty sac being plainly palpable.

Almost immediately the infant took food and stimulants freely and brightened up amazingly. The sac was appreciably filling the next day and on the third day was quite full with returning symptoms of obstruction. Tapping was again performed July 14 and 17 with much the same results as at first. The weight now was five pounds.

On the 21st the condition was again very bad the weight being four and three-quarters pounds. The rectal temperature was 103 degrees and the pulse weak and irregular. Operation was advised as a last resort, and was immediately performed by Doctors Myers and Brown.

Upon opening the abdomen in the median line, a mass about three and a half inches long by two and a half inches wide presented and was found to correspond to the greater curvature of the stomach and to extend for a short distance past the pylorus upon the duodenum. The lumen of the stomach was small and quite empty. An attempt to remove the sac showed the walls to be very thick and distinctly friable. During efforts at removal the pylorus was cut into and the opening closed with much difficulty because of the friability of the thickened tissue. Nearly an hour was required to complete the operation and the infant was apparently dead at its conclusion. Artificial respiration and the free use of stimulation brought reaction after a half hour and conditions steadily improved for about eight hours, when sudden collapse and death supervened.

The location of the cyst was such that when it was full, the pylorus was practically impervious with no obstruction when the cyst was empty. Before evacuation, the symptoms were very similar to those of any severe pyloric stenosis.

Dr. Blakeslee who made the pathologic examination of the specimen states that the structure was very similar to stomach wall except that the mucosa was thinner and smoother and showed but slight glandular formation.

DISCUSSION.

DR. LYON: Dr. Cowie asks me as to the examination of the fluid. The first fluid showed a very small amount of albumin and seemed to be largely composed of mucus. At the time of operation there was a little pus in the fluid, probably from infection during aspiration.

PROPAGANDA FOR REFORM.

Iodum-Miller.—The A. M. A. Chemical Laboratory reports that Iodum-Miller was found to be essentially a solution of iodine and potassium iodide in glycerin containing 1.68 per cent. of free iodin. The Council on Pharmacy and Chemistry report that Iodum-Miller was not eligible for New and Nonofficial Remedies because incorrect statements are made in regard to its composition; because unwarranted therepeutic claims are made for it; and because the application of a trade name to a simple solution of iodin is not to be countenanced (*Jour. A.M.A.*, Oct. 2, 1915, p. 1202.)

Hexa-Co-Sal-In.—Hexa-co-sal-in (Hexa-Co-Sal-In Company, Red Bank, N. J.) is advertised as "a condensation product of familiar composition" and that it is "colchi-magnesium salicylate with anhydrous hexamethylenamin." An examination made by the A.M.A. Chemical Laboratory showed that Hexa-co-sal-in is a simple mixture of hexamethylenamin, magnesium salicylate and some colchicum preparation. The Council on Pharmacy and Chemistry reports that the statement of the composition of this prepararation is false; that unwarranted therapeutic claims are made for it and that the mixture is unscientific (*Jour. A.M.A.*, Oct. 2, 1915, p. 1203).

The Soy Bean.—The soy bean is of medical interest: (1) because it contains the enzyme, urease, which converts urea into ammonia and carbon dioxide and hence is used to estimate urea in urine; and (2) because soy bean products have been recommended as foods for diabetics. Street and Bailey of the Connecticut Agricultural Experiment Station, report that although the soy bean contains about 25 per cent. total carbohydrates, only about 8 per cent. composed of sugar, starch and dextrin, may be considered objectionable in a strict diabetic diet. Thus the sugar-forming carbohydrates contained in soy beans fall well within the limit of 10 per cent. regarded as safe for diabetics (*Jour. A.M.A.*, Oct. 16, 1915, p. 1372).

Iod-Izd-Oil (Miller's).—Analysis in the A.M.A. Chemical Laboratory indicated Iod-Izd-Oil (Miller's) to be a simple solution of iodin in liquid petrolatum containing, not 2 per cent. of iodin, as claimed, but only 0.42 per cent. The Council on Pharmacy and Chemistry found the preparation ineligible for New and Nonofficial Remedies because the composition is not correctly stated and because the application of the trade name to a simple preparation of this sort is irrational (*Jour. A.M.A.*, Oct. 2, 1915, p. 1202).

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January

Editorials

COUNCIL MEETING.

The regular mid-winter meeting of the Council will be held in Detroit at the Hotel Statler, Parlor C, 9:00 a. m., Wednesday, January, 19, 1916, for the transaction of the regular order of business and the consideration of such other matters as may properly come before that executive body.

Signed W. T. Dodge, Chairman.

THE NEW YEAR.

The present number of the *Journal* marks the commencement of a new volume—the Fifteenth. We feel that the time is opportune to request our members to ponder over our *Journal* problems and to unitedly pledge their support to its purposes.

We do not for a moment wish to convey that our publication is in dire straits or confronted by a crisis. We are of the opinion that at present it reflects a high standard and may be favorably compared with any other state publication. However, we are not by any means content to permit our efforts to remain stationary or cease to strive for the attainment of still greater objects.

We have endeavored to cause our pages to contain articles of scientifie and practical value to the greatest number of readers. We have purposely sought to omit any article that was but a repetition of ordinary observations. Perforce we also declined to publish papers on ultra scientific subjeets. Eager indeed we have been to impart information on newer methods and teachings that tried experience has demonstrated as practical and dependable. On the whole the purpose has been to cause our original articles to exert a stimulating and uplifting influence on all our members. To do this has been difficult and frequently our efforts were unavailing because suitable articles were unattainable. Our ability to achieve these ends are largely dependent upon our members for it is they who must contribute the manuscript.

Here, then, is the first line of aetion where enlistments are required. We solicit your articles that reflect the scientific progress, study, investigation and experiences of the profession of Michigan.

We have ever been of the opinion that Case Reports, well written up with a final concise summary of eonclusions arc of practical, instructive value. We have been unable to secure such individual reports. This is our second intrenchment we arc anxious to establish and secure enlistments. Every active practitioner meets with repeated frequency some extraordinary or interesting case. Its report is earnestly solicited for they are bound to prove of interest and value to our readers. We would like to publish two such Case Reports in each issue.

The Transactions of the Clinical Society of the University of Michigan will be continued as in the past. These valuable papers are a distinct asset to *The Journal* and are appreeiated.

Editorially wc admit our inability to comment upon the many diversified interests of the profession. The field is so large that one man cannot authoritatively write upon every topic or happening. Here we are again dependent upon those, who, by reason of their field of activity, are more intimately acquainted with the subject under discussion. We have at frequent intervals written to this or that member requesting him to write an Editorial upon some timely topie. Our requests have been met with pleas of inability, lack of time or ignored. This is the third intrenchment we solieit strengthening. Will you not eause your editor to be the recipient of unsolicited editorials upon timely scientific, organization, civic and communal topics?

Our pages devoted to County Society Reports are maintained for the purpose of stimulating the meetings of the component units of the state organization. By ascertaining the nature

of the work that these County Societies are conducting a renewed interest is bound to become evidenced. County Secretaries are urged to resolve to send in a written report of their meetings and not a mere printed program.

Our membership does not consist of isolated groups of individuals. We are one large family mutually interested in one another's coming and goings. Our News Notes is the fireside of our fraternal relationship. May we not increase its warmth by being enabled to publish more items contributed by our readers?

Lastly our advertising pages make all the foregoing possible. They are an absolute necessity unless we wish to increase our subscription price to $3.00. Repeatedly have we discussed this subject; once more do we urge that you:

1. Read every advertisement.
2. Patronize every advertiser in preference to all the other firms.
3. Let the advertiser know that you favor him.
4. Endeavor to induce others to utilize advertising space in your publication.

This request must receive your continued interest and co-operation and equals in importance all the others.

A statewide manifestation of expressed willingness to co-operate in a movement to make the *Journal* reflect to its fullest degree the progressiveness and high standing of the medical men of Michigan will cause each member and reader to reap ample rewards in the form of receiving each month a better, larger and more valuable *Journal.* Are you disposed to aid and do your part in such a movement?

NATIONAL MEDICAL EXAMINING BOARD.

Our attention has been called to a news item recently published in the Detroit Free Press, under the caption of:

"National Medical Body of Examiners to meet. Michigan to permit physicians passing its test to practice in the state."

This item states, "Recently a National Board of Medical Examiners was appointed by Dr. Rodman, of Philadelphia, President of the American Medical Association," * * * "All states have their own board of medical examiners, but several of the states, among them Michigan, have expressed their willingness to permit physicians to practice who have passed a medical examination before this board, without taking the additional state board examinations."

The simple reading of the Michigan medical and allied acts, and a practical knowledge of the United States and Michigan State constitutions, would have prevented the publication of the above article. Laws regulating the practice of medicine in the several states are enacted under what is termed the *police power,* under the tenth amendment to the United States constitution. The term *police power* has in view the promotion and preservation of the public welfare. It is an attribute of sovereignty, which exists without reservation in the constitution, and is founded on the duty of a state to protect its citizens and to provide for the safety and good order of society. It is an essential element in all orderly governments, for upon it depends the security of the social order, the life and health of the citizen, the enjoyment of private and social life, and the beneficial use of property. It is the very foundation upon which the social system exists in a state. It is founded primarily upon an old civil law maxim, *"salus populi est suprema lex"*—"The welfare of the state is of first importance."

It will be seen, therefore, that the *police power* covers almost every activity of social life in the state, including certain trades, professions and callings, and a thousand and one other activities involved in state government. In a state government, under the police power, there is seemingly no beginning or end to its authority to regulate social and economic conditions.

Under the constitution of the state, a board created by the legislature, defining its duties, has no power to delegate its authority. Consequently, under the constitution of the state, and the constitution of the United States, it would be impossible for the Michigan Board of Registration in Medicine to delegate to the proposed National Medical Board its authority to issue certificates of qualification to physicians, and to recognize, in lieu of its own certificate of qualification, the certificate of the proposed national body.

In the exemption clause of every state medical act will be found this proviso: "This act shall not apply to the commissioned surgeons of the United States army, navy or marine hospital service, in actual performance of their official duties." The physicians exempted are graduates of accredited medical colleges, have been issued commissions (licenses) subsequent to passing a physical and medical examination conducted through the authority of the United States Government, under ideal standards and conditions, similar to the examination proposed by the national board. Nevertheless, these commissions, or licenses, are not primarily

recognized by state governments as legal qualifications to practice, even upon employees of the Federal Government, to say nothing of practicing upon the general public, hence the exemption clause in state medical acts. If the state medical boards are powerless, or have no authority to recognize a high standard, federal qualification, or certificate, how can they recognize the qualification, or certificate, of a voluntary association, especially so, when the constitution does not provide for the exemption of these certificates. It is true, perhaps, that one or two medical boards in the United States have taken upon themselves a legislative function, and in their regulations provide for the recognition of federal qualifications, but this in nowise affects the legal status of the question under discussion.

Under the so-called reciprocity clause, the legislature gives authority to the board to recognize the certificate of registration, or license, of another state in the Union, provided the qualification involved in such license is equivalent to the Michigan license. The licenses, or certificates, issued by other states, are based upon the same authority, i. e., the *police power* of the state in which such certificate is issued. The proposed national body is not a board created through the police power of any state, or under the constitution of the United States, and, consequently, has no authority. The fundamental value of any certificate, or license, is based upon legal authority, otherwise it has no value as a legal document. It may have value as evidence of qualification, or as testimony covering such qualification, but it cannot be recognized as a qualification in law, consequently, as evidence of qualification, the certificate issued by the proposed national board might, without question, be ideal, from the standpoint of an unauthorized qualification, but involving legal qualification it would be valueless. What applies to Michigan in this connection, would also apply to the other states in the Union. Eliminating the legal element in the proposed certificate or qualification, it would have a similar status to the Fellowship certificate issued by the recently created American College of Surgeons, and from this standpoint its actual value could be recognized, not only by the profession, but by the public.

Dr. Rodman, advocating this national board before the Federation of State Medical Boards two years ago, when his attention was called to the want of authority involved in his proposition, stated that an amendment to the United States constitution was possible. An amendment which would cover simply the right to issue medical licenses could not be had without involving the entire police power of the state, and it would abolish what is known as *state rights* and *state lines*, and Michigan, for example, would not be Michigan, but the United States of America, or perhaps a territory of the U. S. A. Likewise other states in the Union would be similarly affected.

This question of a voluntary national examining board is not new. It was suggested by Dr. Rodman fifteen years ago, to the National Confederation of Medical Examining and Licensing Boards, at a meeting held in Saratoga in 1900. A committee of the Confederation, however, reported against this plan to the American Medical Association, as follows:

"Against Voluntary National Examining Board.

"On motion of Dr. MacCormack, Dr. A. Walter Suiter, Secretary of the National Confederation of Medical Examining and Licensing Boards, was given the privilege of the floor.

"He said that at a meeting of the Confederation, held Monday afternoon, the subject of a Voluntary Board of National Examiners was discussed and subsequently referred to a committee. This committee reported as follows:

"Your committee to whom was referred the proposition originally made and discussed in the medical press by Dr. W. L. Rodman of Philadelphia, for the establishment of a voluntary board of national examiners, with instruction to consider the same, and report thereon to this confederation as to its feasibility, begs leave to report as follows:

"In the opinion of your committee, this confederation cannot endorse nor approve such a proposition for the following reasons, namely:

"1. A voluntary national examining board would have no power, no authority, or legal right to exist.

"2. No guarantee could be given of the continuance or permanency of such voluntary board, even were the laws of the several states so modified as to meet its requirements.

"3. Being a voluntary board, there could be no legal manner of constituting, changing, or limiting its membership, or defining its duties.

"4. Such a board would be representative of the profession only, and of the regular profession alone.

"5. Without the endorsement of a state board authorized by law to grant a license to practice, a certificate of qualification from the proposed voluntary board could have no legal value whatever, and under the existing laws of the several states, the state examining boards are required to conduct the examinations, and such boards cannot evade, nor surrender, such duty, even if they desired to do so.

"6. To attempt the stupendous task of securing the passage of amendments to the existing laws regulating the practice of medicine in the several states would entail enormous labor and expense, and would probably endanger the laws themselves.

"This report was received by the American Medical Association at its Saratoga meeting."

If this committee had limited itself in its report of its findings to reason No. 1, as above, there would have been no necessity for further comment. But the committee making this report had not in mind the old story of the man who had ninety-nine reasons for not paying his debts, the first reason being that *he had no money.* This reason being held sufficient, it seemed unnecessary to discuss the remaining ninety-eight reasons. Under reasons 2, 3, 5 and 6, the fundamental reason of the committee under No. 1 is lost sight of, involving the tenth amendment of the United States constitution covering the police power of states.

Dr. Rodman's main object in suggesting a national board in 1900 was to promote uniformity and the raising of standards, involving medical licensure in the several states, and as a result of this accomplishment, the practicability of interstate endorsement of medical licenses. At that time (1900) none of the states in the Union were recognizing a license issued in another state as a qualification for endorsement. In 1902 Michigan, Indiana and Wisconsin entered into reciprocal relations, agreeing to accept medical licenses of a certain definite standard for endorsement. Since then the majority of the better states, and at this time approximately forty states, have adopted the interstate endorsement policy, and some two thousand licenses are issued annually under the reciprocity clauses of the several states. Working in harmony with the national medical associations and the Association of American Medical Colleges, state medical boards have more than fulfilled the expectation of the originators of the practical and legal method of interstate endorsement.

Standards of preliminary and medical education, methods of administration and teaching, and uniformity of requirements have been increased at least 100 per cent. during the past decade, involving both medical colleges and state medical boards. The elimination of the low-grade college through higher requirements and more exact methods of administration has been a very important factor in the results obtained. *Recognizing and appreciating these results, it is difficult to understand an adequate reason for the attempt to establish an impossible (from the legal standpoint) national examining board at this time.* It has not even the merit of being synonymous with the policy of "swapping horses in the middle of the stream." This suggestive national board, which we believed completely and permanently anesthetized fifteen years ago, does not even furnish the other horse necessary to the pair. Would it not be a better policy to continue the good work already accomplished, which is built upon a legal foundation, rather than to divide our forces in attempting an impossible ideal?

There exists to-day, in the United States, a national association, namely, the Federation of State Medical Boards. Membership in this federation is limited to state medical boards—not members or ex-members of state medical boards. Consequently, the several schools of practice are represented in this organization. The constitution of the Federation of State Medical Boards provides for the creation of suggestive standards of preliminary and medical education, the recognition of standard medical colleges, methods of administration and the interstate endorsement of medical licenses. It is a semi-official body through its method of membership, and if a national board of examiners were possible in law, such board should owe its creation to this federation. If the suggested fees involved in the examination by the unofficial and self-constituted national board of examiners, to be obtained from the already financially over-burdened graduate, should be made available, either to the federation or to the several state medical boards, then an equivalent examination to that proposed by Dr. Rodman's method could be easily had, without the added expense of the recent graduate traveling from the western states and other distant points north, south, east and west, to Washington, which would involve, in the aggregate, a very large sum.

We are at a loss to understand the method by which Dr. Rodman delegates to himself the authority of state legislatures and state medical boards. The question naturally arises, did Dr. Rodman receive his inspiration from Henry Ford, or did Henry Ford receive his inspiration from Dr. Rodman? Their exploitations of higher ideas, involving methods of accomplishment, are synonymous, with this exception, Mr. Ford supplies the wherewithal, whereas Dr. Rodman exploits the innocuous, unsophisticated and financially embarrassed recent graduate.

In view of the above it seems unnecessary to state that the Michigan State Board of Registration in Medicine has not, as reported in the newspaper item, expressed, either formally or informally, its willingness to endorse the proposed certificate of qualification to be issued by the National Medical Body of Examiners.

INDIVIDUALIZATION IN INFANT FEEDING.

Probably there is no greater achievement in medicine than the bringing of an infant to the age of two years possessed of normal health and development, and there is no doubt that this result is largely dependent upon proper feeding. What you are at the age of two goes far in determining your capacity for development in later life.

The proper feeding of an infant always implies full consideration of individual problems —and routine feeding by "rule of thumb" or haphazard methods may conceivably lead to disaster and in fact often does so.

Nothing less than intelligent and careful investigation coupled with advice, based upon knowledge, can acceptably solve the problems incident to the successful feeding of an infant. This means that each infant must be studied as a unit, and developed as such, giving all due heed to his individual variations of structure, habit and idiosyncrasy.

Because the value of breast feeding stands pre-eminent we shall consider it first. From the maternal side there is present several matters of importance. Aside from her general health and strength there is the development and functional capacity of the mammary glands, the size and shape of the nipples, and cracks and ulcerations of the nipples, also the quantity and quality of the milk as effected by diet, hygiene, and habits. No pains or sacrifice aside from too great a strain upon an over-weak or diseased woman should stand in the way of suckling an infant. Then we have to note certain infantile factors such as insufficient strength for sucking, sore mouth, tongue-tie, cleft palate and other malformations, anyone of which may preclude successful breast feeding unless corrected or circumvented by available means.

Extra fat breasts must not be allowed to interfere with the babe's breathing—depressed nipples can usually be drawn out. Sore nipples, the pain from which may greatly diminish or even inhibit the milk flow, may be protected and healed, the diet and habits of the mother may very considerably modify the quantity and quality of the milk.

The weak baby may be fed the milk taken from the breasts until such time as he may gain sufficient strength to get it for himself. I have fed babies this way for three months and then had them suckle successfully until the proper time for weaning. Tongue tie may be cut, with immediate good results, while with deformities the milk may have to be pumped and fed during the entire period of lactation. Sore mouth usually gives no serious trouble if discovered and treated.

It should be almost a fixed rule that aside from plenty of water and the breast the newborn infant should receive nothing, as we thus avoid indigestion, disinclination to suck, because of repletion, and escape a heavy loss of weight and strength which is often due to lack of fluids and to the inanition fever which seems incident thereto.

I believe that many instances of failure of breast feeding are due solely to improper feeding during the first ten days. The length of feeding time and the interval cannot be rigidly pre-determined as several extremely variable factors are concerned. The babe should suck long enough to obtain a sufficient quantity of milk, which may be easily ascertained by weighing, and he should wait for his next meal until his stomach is empty, which may be two, three or four hours and sometimes even longer.

The present tendency is toward the longer feeding intervals, but surely there are instances where this may be disastrous as certain failing babies will apathetically starve to death if not fed frequently the small quantities that they can digest. Troubles from feeding too much or too often are much more common.

As most of these factors concerned may be quite easily determined, there is no excuse for not attempting to make those adjustments necessary to successful breast feeding, in the individual instance, and no babe should be subjected to untimely weaning until the case against the breast has been well proven. A careful investigation not infrequently shows some fault of quantity or quality of the milk which may be remedied by a supplementary feeding which may allow the breast feeding to be prolonged for months. Supplementary feeding should always follow the giving of the breast and not replace it—for this replacing the breast feeding with the bottle often determines a rapid failure of lactation.

I find that in changing from a short to a long feeding interval that it usually works well to give both breasts at each feeding to insure a sufficient quantity of milk and to avoid having the infant suckle an empty breast for a number of minutes. It is fairly easy to determine whether the breast milk obtained by an infant matches up to his caloric requirements and if it does and there is an unsatisfactory weight curve one must look to indigestion, with its vomiting, diarrhea or constipation, to infection

or other ill for an explanation and a remedy and not hastily resort to a haphazard change of food.

Now and then an infant must be aided in digesting his mother's or other woman's milk, I recollect an atrophied infant with marked carbohydrate intolerance who digested woman's milk with comfort only after it had undergone lactic acid fermentation—the only way in which you may reduce the sugar without disturbing the fat or proteid.

In proving the case against the breast or any other food upon which an infant may be doing poorly, you may often gain much information as to what food ought to be given. The working out of a rational formula for an infant depends very much upon the caloric requirement and as this in turn depends upon age and weight, individual variation must be more or less accurately satisfied. (To be continued.)

Editorial Comments

DUES.—Your 1916 dues are now payable and should be promptly paid to your local secretary. The delayment of prompt payment places an extra burden on your local secretary. You will greatly lessen his work by handing him your check at the next meeting.

The annual report of the Secretary-Editor will be published in the February issue together with the minutes of the mid-winter meeting of the Council.

Did you commence the New Year with a determination of being more businesslike in your financial affairs? The advertiser cannot come to you personally, therefore he sends his direct representative to interview you. If the advertiser called in person you would accord him a courteous interview. You should likewise accord his representative, the advertisement, equal courtesy. To that end, in respect to the advertiser, please read all our advertising pages. If you cannot do business with them, then write and express your appreciation for the call of his representative that is made upon you through the medium of your own publication.

Correspondence

Boston, Mass., Nov. 20, 1915.

Editor, *Journal of Michigan State Medical Society,*
Grand Rapids, Michigan.

Dear Sir:

Will you kindly insert in your *Journal* in some form that may seem suitable to you the following notice:

"The Evans Memorial for Clinical Research is desirous of coming into communication with as many physicians as possible who have used bacterial vaccines in the treatment of typhoid fever for the purpose of collecting statistics concerning the efficiency or nonefficiency of the method as a therapeutic measure. If any who have done this even with only one or a few cases will send their names and addresses, blank forms will be sent to them upon which uniform reports may be made. Due credit will be given to each in any reports that may be published. Kindly address all communications to Dr. W. H. Watters, 80 East Concord St., Boston, Mass."

Very sincerely yours,

Frank C. Richardson,
Clinical Director.

Detroit, Mich., Dec. 15, 1915.

Dr. F. C. Warnshuis, Editor,
Journal of Michigan State Medical Society.
Grand Rapids, Michigan.

Dear Sir:

My attention has been directed to the letter of Dr. Hathaway in the December, 1915 number of the *Journal.* In this letter Dr. Hathaway calls attention to the report of the Committee on Venereal Prophylaxis made at the Fiftieth Annual Meeting of the Michigan State Medical Society and printed in the *Journal* Vol. 14, No. 10, October, 1915, page 535.

"Today there is but one public hospital to which the syphilitic as such can gain admittance and be treated during the dangerous time of his infection."

Dr. Hathaway calls attention to two hospitals which receive these cases and I wish to call your attention to another.

The Grace Hospital of Detroit has for many years treated syphilis in all its forms.

A reference to the medical and surgical report of the Hospital for 1914 gives the following as the number of cases treated during the past two years: Early syphilis 130 cases; late syphilis twenty-seven cases.

Cases of both recent and late syphilis have been shown in the Clinics of the Detroit College of Medicine held in this Hospital.

It is evident that the Committee who made the report did not go to the hospitals for their information, but based their statement on hearsay evidence.

We trust that you will give this communication space in the *Journal* in order to correct any false impressions that the profession may have received from the report.

Yours very truly,

The Grace Hospital,
W. L. Babcock, Superintendent.

Deaths

Resolutions for Dr. Johnson

The Huron County Medical Society met Friday evening, October 22, and elected the following officers: Dr. Armitage, President; Dr. Morden, Vice-President; Dr. Young, Secretary.

Resolutions of condolence were adopted with regard to the death of Dr. H. Johnson, of Caseville, as follows:

Whereas, our friend and colleague, Doctor Henry Johnson, after a long and active career of usefulness, has been removed from our midst by death; and,

Whereas, He was ever a faithful and never-failing attendant at all the meetings of the Huron County Medical Society; therefore be it

Resolved, That as a just and fitting tribute to his memory, we express our regret at his removal from amongst us, and we mourn one who was in every way worthy of our respect and esteem; and, be it further

Resolved, That our sympathy and sincere condolence are hereby tendered to the family of the deceased on the dispensation with which it hath pleased Providence to afflict them, and that this heart-felt testimonial of our sympathy and sorrow be spread upon the records of the Society, and that a copy of it be conveyed to the family of our departed colleague and brother.

DR. A. E. W. YALE,
DR. D. CONBOY,
DR. S. B. YOUNG,
Committee.

Dr. Frank D. Wheeler of Detroit died Nov. 29, after an illness of one year. After coming to Detroit and graduating from the Detroit Medical College in 1880 with the degree of M.D., Dr. Wheeler took a post graduate course in one of the leading medical institutions of Edinburgh, Scotland.

Dr. T. R. Allen, Ionia, died Dec. 4, in Chicago where he underwent an operation which it is understood was not a serious one and it is believed his death resulted from heart trouble. He had been a practicing physician in Ionia for the past forty-four years.

State News Notes

Dr. H. S. Gradle of Chicago held an Eye Clinic in Dr. D. Emmett Welsh's Clinic at the Soldiers Home in Grand Rapids. Six operations were performed. There were present Drs. Bernstein, Kalamazoo; V. A. Chapman, Muskegon; F. E. Grant, Kalamazoo; E. P. Wilbur, Kalamazoo; J. G. Huizinga, Grand Rapids; Louis A. Roller, Grand Rapids; W. P. Gamber, Muskegon; A. Leenhouts, Holland; J. E. Ferguson, Grand Rapids; G. W. Lowry, Hastings; J. J. Defendorf, Ionia; J. R. Rogers, Grand Rapids; E. W. E. Paterson, Grand Rapids; Maj. Grube, of the Soldiers Home.

The Twelfth Annual Conference on Medical Education, Public Health and Legislation will be held at the Congress Hotel, Chicago, Feb. 7 and 8, 1916.

Monday will be devoted to Medical Education, and Tuesday to Medical Legislation and Public Health.

On Wednesday, February 9, the Federation of State Medical Boards and the Association of American Medical Colleges will meet.

Dr. B. E. Manchester, one of the United Doctors' outfit, attempting to do business in Kalamazoo was arrested on complaint of Dr. B. D. Harrison, Secretary of the State Board. The warrant alleged unprofessional conduct and misleading advertisements.

Dr. C. B. Burr of Flint has been elected one of the directors of the National Security League. The doctor will be pleased to hear from anyone desirous of aiding in establishing local branches of this National organization.

Dr. Milton Chase of Otsego has a set of the Surgeon General's report of the Civil War which he wishes to dispose. Anyone desirous of securing such a set should communicate with the doctor direct.

The Gratiot and Isabella County societies have voted to consolidate to form a larger and stronger organization.

Dr. J. G. Cumming, assistant in hygiene and director of the Pasteur institute of the U. of M. has tendered his resignation to the Board of Regents.

C. C. Beach of Battle Creek has established a scholarship in medical research in the Medical Department of the State University.

President Hornbogen has appointed Dr. Guy L. Kiefer of Detroit as delegate to the National Legislative Committee Conference in Chicago.

Dr. Stewart Hamilton, formerly medical director of Harper Hospital, Detroit, has been appointed superintendent of that institution.

The new U. B. A. Hospital at Grand Rapids is practically completed and will be occupied sometime in February.

Dr. C. J. Durham of Muskegon was elected President of the West Michigan Homeopathic Society.

Alpena expects to open its new hospital during January. It has accommodations for twenty patients.

Dr. A. O. Miller of Freeport has located in Reed City.

Dr. W. E. Wilson, retiring interne Butterworth Hospital, has entered general practice in Grand Rapids.

Dr. W. Joe Smith of Cadillac has been appointed health officer to succeed Dr. D. Ralston.

Dr. and Mrs. H. L. Bower of Greenville celebrated their fiftieth wedding anniversary on Dec. 15.

Dr. N. H. Kassabian of Coopersville has moved to Detroit and is located at Highland Park.

County Society News

CHIPPEWA COUNTY

The annual meeting of the Chippewa County Medical Society was held in this city on the evening of Dec. 7. The minutes of the last previous meeting were read and approved. The Secretary and Treasurer's reports were received and adopted.

After the reading of a most interesting paper on "Acute Anterior Poliomylitis" by J. J. Suffin it was fully discussed.

The following officers were elected for 1916.

President—Dr. J. V. Yale, Sault Ste. Marie.
Vice Pres.—Dr. R. E. Stocker, Brimley.
Sec.-Treas.—R. C. Winslow, Sault Ste. Marie.
Delegate—Dr. E. H. Campbell, Newberry.
Alternate—Dr. J. A. Ferguson, Sault Ste. Marie.

R. BENNE, Secretary.

GRATIOT COUNTY

The Gratiot County Medical Society met in the Wright House in Alma, Dec. 16. Eighteen members and one visitor were present; the minutes of the previous meeting were read and approved. The secretary's report was read as follows:

Eight meetings and one banquet were held during 1915. There are thirty-two doctors in the county of whom twenty-seven were members the past year.

Balance on hand Dec. 31, 1914	$ 4.80	
Received from members	134.00	
		$138.80
Honorariam to Secretary for 1914	$ 10.00	
Remitted to State Secretary	81.00	
Expense of invited guests	19.26	
Printing, postage, envs., etc.	17.81	
Honorariam to Secretary for 1915	10.73	
		$138.80

Meting adjourned to meet with Isabella-Clare.

E. M. HIGHFIELD, Secretary.

Pursuant to a joint notice from the Secretaries of Gratiot and Isabella-Clare, eighteen Gratiot and five Isabella-Clare members met at the Wright House in Alma to consider consolidating. After some preliminary discussion a motion was made by Dr. Bagley, and supported that we join to form the Gratiot-Isabelle-Clare Society (GIC) Carried.

Officers were then chosen as follows:

Pres.—Dr. I. N. Brainerd, Alma.
Vice-Pres.—Dr. C. D. Pullen, Mt. Pleasant.
Secretary—Dr. E. M. Highfield, Riverdale.
Board of Censors—Drs. M .F. Bronstetter, H. V. Abbott, E. H. Foust.

It was voted we meet once a month, that we charge $2.00 a year for County dues. All members of each society are declared members of the new Society. Dr. L. J. Burch of Mt. Pleasant was elected to membership for 1916.

No papers were read.

E. M. HIGHFIELD, Secretary.

HILLSDALE COUNTY

The Hillsdale County Medical Society held its Annual Meeting Dec. 17, 1915 when the following program was rendered.

Symposium Anesthetics.
Discussion lead by Drs. E. A. Martindale, B. F. Green.
General Discussion.

President Address. Pernicious Anemia.
H. H. Frazier.

The following officers were elected for the year 1916:

President—Dr. O. G. McFarland, Montgomery.
Vice-President—Dr. H. C. Miller, Hillsdale.
Sec'y-Treas.—Dr. E. A. Martindale, Hillsdale.

E. A. MARTINDALE, Secretary.

KALAMAZOO ACADEMY OF MEDICINE

The Kalamazoo Academy of Medicine held its annual meeting on December 14, 1915 and elected the following officers for 1916.

President—Dr. A. L. Robinson, Allegan, Mich.
First Vice-Pres.—Dr. G. E. Youngs, South Haven.
Second Vice-Pres.—Dr. F. A. Butterfield, Lawrence, Mich.
Third Vice-Pres.—Dr. Alice B. Ellsworth, Kalamazoo, Mich.
Secretary—Dr. Leslie DeWitt, Kalamazoo, Mich.
Treasurer—Dr. R. G. Leland.
Board of Censors for Three Years—Malcolm Smith, Allegan, Mich. and Dr. John Stewart of Hartford, Mich.

Delegates to the Michigan State Medical Society for 1916—Dr P. T. Butler, Kalamazoo, Mich.; Dr. A. L. VanHorn, Otsego, Mich.; Dr. W. F. Hoyt, Paw Paw, Mich.

Alternates—Dr. L. V. Rogers, Galesburg, Mich.; Dr. C. A. Bartholomew, Martin, Mich.; Dr. N. D. Murphy, Bangor, Mich.

The essayists of the day were Dr. V. C. Vaughan of Ann Arbor and Dr. John N Hurty of Indianapolis and Dr. Frederick Shilito of Kalamazoo.

C. B. FULKERSON, Secretary.

SECRETARY'S ANNUAL REPORT FOR 1915.

The Kalamazoo Academy of Medicine has convened for six special sessions, two memorial, three programs and one pertaining to public welfare, and twenty-one regular meetings. The largest attendance at any regular or special meeting was 185, and the general average was fifty-seven, or eight more than the general average for 1914.

The society has five honorary members, one of whom is still in active practice, six associate members, two non-medical members, and one hundred forty regular members. In 1914 we had one hundred forty-seven regular and active members.

We increased our dues in 1914 from four and five dollars to five-fifty and eight dollars respectively. This, no doubt, is one of the causes for the decrease in membership.

One honorary member, Dr. Matilda Towsley, of Kalamazoo, and one regular member, Dr. L. G. Rhodes, of South Haven, have been removed from our midst by death.

The medical survey of Allegan and Van Buren and Kalamazoo counties is as follows:

Allegan County.—Doctors that are registered, 37. Doctors that are members of the Academy, 19, or 51 per cent. of the medical profession in Allegan county belong to the Kalamazoo Academy of Medicine as compared to 60 per cent. in 1914. There are many medical men in Allegan county eligible to membership but likely belong to some other county society more accessible.

Van Buren County.—Doctors that are registerd, 36, 26 of which are members of the Academy, or 72.2 per cent belong to the association, an increase of 2.2 per cent. since 1914.

Kalamazoo County.—Number that are registered, 107, of which 84 are members, or 79.1 per cent. belong to the Kalamazoo Academy, an increase of 1.1 per cent. since 1914. There are five or six men that are eligible, but are not members of the association. The total number registered in the three counties is 181, of which 129 are active members, or 71.4 per cent., a decrease of 2.6 per cent. since 1914.

For 1915 the Bulletin has been issued exclusively for announcements and programs, for abstracts of papers and current news items pertaining to the medical profession locally and medicine in general.

The Acadamy of Medicine is greatly indebted to The Upjohn Company for the liberal contribution toward making the Bulletin a success and elimination of error in its preparation.

The Academy of Medicine closes a successful year in many of the various phases of its work. There are three phases of activity that need development, viz: Demonstration of specimens, presentation of clinical cases and arrangements for clinics on Academy days at the hospitals, and the increase of our membership. Surely our Academy is an active organization, but there are men who do not realize the high standard of our programs. Personal work on the part of our membership should be done to bring new men and to get all of the membership to attend. Our average attendance is only a little more than one-third of our membership. Our average attendance should be at least one-half of the total membership or about seventy or seventy-five.

On December 14 your humble servant will have completed the three-year period of service as secretary. My association with the membership and officers has been most pleasant, and I wish to take this opportunity to thank the society for the courtesy extended to me during these years. Though at this time I will be relegated to the ranks of the Academy, I will always endeavor to do what I can to maintain the present standard of the Association.

Respectfully submitted.

C B. FULKERSON, Secretary.

TREASURER'S ANNUAL REPORT.

Receipts.

Balance brought forward from 1914	$ 2.41
Received of active members for dues	923.25
Associate members for dues	13.00
Other sources	2.00
Total	$940.66

Disbursements

State secretary	$425.00
Guests	86.59
Postage and stationery	98.28
Printing and Bulletin stock	84.00
Library	54.75
Dispatches—telegrams, long distance telephone and local	49.58
Care of rooms	16.42
Lighting	6.39
Flowers	3.50
Ledger for recording the minutes	5.20
Miscellaneous	2.40
Scientific purposes	6.64
Total	$836.75

Cash on hand	$103.91
Special assessment with interest	$205.38

Respectfully submitted,

DR R. G. LELAND, Treasurer.

BUDGET FOR 1916.

State society	$420.00
Guests	125.00
Stenographer	25.00
Permanent improvements	27.00
Postage	100.00
Flowers	15.00
Lighting	10.00
Janitor	25.00
Library	75.00
Anti-Tuberculosis Society	28.00
Telephone and telegrams	20.00
Printing	70.00
	$940.00
63 members at $8.00 per member	$504.00
77 members at $5.50 per member	423.50
5 members at $2.50 per member	12.50
	$940.00

(Signed) DR. A. S. YOUNGS,
DR. R. G. LELAND,
DR. C. B. FULKERSON,

ANNUAL REPORT OF THE PROGRAM COMMITTEE.

During the past year there have been twenty-one regular Academy programs and three special programs. The first meeting in July was dispensed with so as to allow members to attend the Northern Tri-State meeting held in Ann Arbor The usual South Haven meeting was not held because of the sad and untimely death of Dr. Rhodes

Of the twenty-four meetings, eighteen were held in the Academy rooms, two in the Burdick House Auditorium, one in the Kalamazoo State Hospital, and one meeting each at Allegan, Vicksburg and Lake Cora (annual picnic).

There were forty-five papers, addresses and case reports presented at the meetings. Of this number, twenty-six came from essayists residing away from Kalamazoo, seventen from Academy members, and two from local non-medical men. There were six reports of clinics and conventions attended by Academy members.

The names and addresses of our essayists are the following: Drs. Warthin, Camp, Darling, Hewitt, Vaughan and Schmidt, from Ann Arbor, Michigan. Drs. Percy, Shambaugh, Beck, DeLee, Brophy, Lewis Goldstine, Murphy, Ridlon and Koessler from Chicago, Ill Doctor Bloodgood from Baltimore, Maryland; Dr. W. J. Mayo, from Rochester, Minn.; Dr. Porter from Fort Wayne, Indiana; Drs. Morley, Taylor and Vaughan, from Detroit, Mich.; Dr. Lyons, from Jackson, Mich.; Dr. Reye, from Pontiac, Mich.; Drs. Babcock, and Pfahler from Philadelphia, Pa.; Dr. Hurty, from Indianapolis, Ind.; and Dr. Campbell, from Grand Rapids, Mich.

A table of the subjects presented during the year is as follows:

Syphilology and Dermatology	3	Obstetrics	6
Cancer Research	1	Orthopedics	1
Nervous Diseases	1	Oral Surgery	1
Gynecology	1	Tuberculosis	4
Oto-Laryngology	4	Hygiene	1
Surgery	5	Non-Medical	1
Psychiatry	4	Reports of Clinics	6
Gastric Diseases	2	Therapeutics	1
Internal Medicine	6	Eugenics	1
Pediatrics	1	Chemistry	1

Twenty-one of the twenty-six out-of-the-city essayists are professors or instructors in medical universaries or medical schools.

(Signed) LESLIE H. S. DEWITT, Chairman.

ANNUAL REPORT OF THE CLINICAL COMMITTEE.

Five special clinical programs have been prepared during the year: Two surgical, one neurological, one tubercular and one orthopedic. Twenty or more cases have been presented for diagnosis, treatment, or some surgical procedure.

Respectfully submitted,

FREDERICK M. ILGENFRITZ, Chairman.

REPORT OF THE LIBRARY COMMITTEE.

The effort of the Library Committee can be briefly summarized as an attempt to improve to a degree the amount and scope of information obtained through current medical literature. To this end besides renewing old subscriptions we have taken it upon ourselves to enter new subscriptions for the following journals:

The Lancet.

Surgery, Gynecology and Obstetrics (with abstracts).

Journal of Infectious Diseases.

Progressive Medicine.

The American Journal of Medical Sciences.

Other journals, especially those of the specialties, may profitably be added later.

The library shelves are sadly in need of renovation. Many of the books are old and absolete and should be replaced by newer works if a reference library is desired.

A set of Osler and McCrae's "Modern Medicine" has been added.

A reading room with stated hours would add greatly to the efficiency of the library and would prevent the necessity of journals being taken from the room.

Respectfully submitted,

(Signed) W. C. HUYSER, Chairman.

ANNUAL REPORT OF THE ANTI-TUBERCULOSIS COMMITTEE

The committee on Anti-Tuberculosis wishes to report that it has done no special work but it has co-operated in every way possible with the Anti-Tuberculosis Society and the Dispensary on East Lovell street.

(Signed) R. G. LELAND, Chairman.

ANNUAL REPORT OF THE SOCIAL HYGIENE COMMITTEE.

Eight talks were given through the winter and spring to groups of shop girls and business women, and to one mission club numbered over sixty. Their subjects were as follows:

First Aids to Beauty—care of skin, etc.
Dust-Born Diseases.
Common Dangers Lurking in Public Places.
Physiology and Hygiene of the Pelvic Organs.
Social Diseases and Their Effect upon the Race.
Preparation for Motherhood.

As a direct result of this club work a group of twelve young mothers was formed for the purpose of gaining information relative to the care and rearing of their children in regard to information concerning sex. One talk was given a mother's club upon "Hygiene of the Infant," touching particularly upon the habit of masturbation.

One talk has been given a club of young women of the Kalamazoo College upon the subject of "Juvenile Court and Social Diseases."

Respectfully submitted,

DR. ALICE BARKER ELLSWORTH, Chairman.

ANNUAL REPORT OF THE SOCIAL FUNCTIONS COMMITTEE.

As chairman of your Social Functions Committee I beg to submit the following report:

We have had fourteen luncheons at the local hotels, one at Vicksburg, and one at Allegan, the members of the Academy being entertained by the Allegan county physicians. We have also had a social session at Lake Cora, August 24, for the doctors and their wives, which was very well attended, and on March 10 we were entertained at the Michigan State Hospital by the staff.

They were all very well attended, sixty-five being the largest number at any single luncheon, and twenty-two being the general average at each luncheon.

Yours respectfully,

DR. R. U. ADAMS, Chairman.

ANNUAL REPORT OF THE BOARD OF CENSORS.

There have been eight applications presented to the Board of Censors for admission into the Academy during the year of 1915. Six of these are active members and two associate. All of these have been unanimously acted upon by the Board of Censors and seven have been duly elected to membership in the society. The application of Dr. H. W. Stuck, of Allegan, will be presented to the society for its final reading at the annual meeting. Those who have been duly elected to active membership are: Drs. W. A. Singleton, of Hickory Corners; R. A. Morter, of Kalamazoo; Wm. R. Young, Lawton; W. R. Vaughan, Plainwell; H W. Wiley, South Haven; and the associate members are: Dr. L. H. Harvey, Prof. W. E. Praeger, both of Kalamazoo.

Respectfully submitted,

W. A. STONE, Chairman.

ST. CLAIR COUNTY MEDICAL SOCIETY

Regular meeting of the St. Clair County Medical Society was held in Port Huron Thursday evening Dec. 2. Election of officers was the important event of the meeting.

President—Dr. A. J. McKenzie.
Vice-President—Dr. W. H. Morris.
Secretary-Treasurer—Dr. W. W. Ryerson.
Delegate—Dr. J. L. Chester.
Alternate Delegate—Dr. C. B. Stockwell.
Director three years—Dr. S. K. Smith.

A number of interesting cases were reported and discussed by the members.

Dr. Exelby was elected a member of the Society.

W. W. RYERSON, Secretary.

SHIAWASSEE COUNTY

The annual meeting of the Shiawassee County Medical Society was held at Owosso in Dec. 7, 1915 at the Hauck Hotel at 7:30 p. m. There was a good attendance. The annual election was held and the following officers elected.

President—Dr. P. S. Willson, Owosso.
Vice-President—Dr. L. M. Cudworth, Perry.
Secretary-Treasurer—Dr. W. E. Ward, Owosso.
Delegate—Dr. S. S. C. Phippen.
Board of Directors—Dr. J. A. Rowley, Durand; Dr. A. L. Bailey, Chesaning; Dr. O. B. Fritch, New Lothrop.
Medico-Legal Representative—Dr. C. M. McCormick, Owosso.

Dr. Guy L. Kiefer of Detroit addressed the Society on the subject of "Diphtheria" and his talk was very much enjoyed. A free discussion was also very instructive. He was given a vote of thanks. The Society then adjourned to an oyster supper and spent a social hour together.

W. E. WARD, Secretary.

Book Reviews

THE MEDICAL CLINICS OF CHICAGO. Volume I Number III (November, 1915). Octavo of 200 pages. 23 illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Price per year. Paper, $8.00. Cloth $12.00.

DISEASES OF THE NOSE AND THROAT. By Algernon Coolidge, M.D., Professor of Laryngology in the Harvard Medical School. 12mo. of 360 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, $1.50 net.

This is an interesting ready reference to the important details of examination, diagnosis and treatment of the upper respiratory tract. The work is bound to receive a most cordial reception for it places before the reader the most essential facts and procedures in dealing with diseases of the nose and throat.

A TEXT-BOOK OF PATHOLOGY. By Alfred Stengel, M.D., Professor of Medicine, University of Pennsylvania, and Herbert Fox, M.D., Director of the Pepper Laboratory of Clinical Medicine, University of Pennsylvania. Sixth Edition, Reset. Octavo of 1045 pages, with 468 text-illustrations, many in colors, and 15 colored plates. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, $6.00 net, Half Morocco ,$7.50 net.

Extensively revised and fully to up to date. Excellently compiled and perfect in typographical workmanship. That is the impression gained upon examining this new edition.

It is a discussion of pathological conditions that enables the student and graduate to become conversant in a most clear manner with the phenomena that exist in given diseases. It certainly deserves a place in the library of every progressive practitioner. The text and the valuable illustrations render it a work of exceptional excellence.

THE PRACTITIONER'S VISITING LIST FOR 1916. Four styles: weekly, monthly, perpetual, sixty-patient. Pocket size; substantially bound in leather with flap, pocket, etc.; $1.25. net. Lea & Febiger, Publishers, Philadelphia and New York.

A most useful and handy visiting list for general practitioners.

STEREOSCOPIC ANATOMY OF THE BRAIN. Surface and Localization. By Wm. Fuller, M.D. Section One consists of ten cards. Price $2.00. Dr. Wm. Fuller, Grand Rapids, Mich.

This illustrative series of ten cards containing sterescopic views of actual dissection is of intense value to every diagnostitian and surgeon. It is the first series of a Pictorial Anatomy of the brain, with each view there is given a concise, descriptive, identifying text.

Dr. Fuller's studies and dissection of the brain and central nervous system are well known. He stands as a peer, an authority, on the subject. To have thus presented to us in pictorial form a complete dissection of the brain, enables us to secure the deductions and results of his years of investigation in concise form.

The result of his labors are most commendatory. This series should indeed be the recipient of universal endorsement and be met with a large sale.

We believe it to be the best source from which we may become intelligently conversant with the true anatomy of the brain and its functions.

SYPHILIS AS A MODERN PROBLEM. By Wm. Allen Pusey, M. D. Professor of Dermatology in the University of Illinois. Cloth, 129 pages. Price 25 cents. American Medical Association, Chicago.

This monograph discusses the problems of syphilis as they affect the individual and society. The topics considered are of interest to layman and physician but are originally intended for the enlightenment of the layman. It is but one of the many efforts of the American Medical Association in its campaign of Enlightenment of the Public in Regard to Health Matters.

The effort is a substantial presentation of the subject, just what has long been wanted. We sincerely hope our readers will secure a number of these volumes for distribution among the influential men of their community.

EMERGENCY SURGERY. By John W. Sluss, A.M., M.D. Associate Professor of Surgery, Indiana University School of Medicine. Surgeon to the City Hospital. Third Edition, revised and enlarged with 685 illustrations. Leather 831 pages. Price $4.00 net. P. Blakiston's Son & Co., Philadelphia.

This is a compilation of methods and technic of procedure in emergency cases where surgery is immediately indicated. It thus forms an admirable guide for the physician who is called upon to immediately undertake the surgical treatment of these conditions. The principles laid down are adequate and reliable and represent the practices of the day. The manual, in its third revision, thus becomes of value. Our greatest objection and criticism is directed to the illustrations which in many instances are crude, schematic and frequently of no more value than to consume space. An improvement in illustrative maerial would markedly enhance the value of the manual which is admirable in its descriptive text.

FRACTURES AND DISLOCATIONS Diagnosis and Treatment. Miller E. Preston, A.B., M.D. Denver, Colo. Cloth 809 pp. 860 illustrations. Price $6.50. C. V. Mosby Co., St. Louis, Mo.

The volume is composed of a discussion of the entire subjects and is amplified with many illustrations of fractures that were taken very soon after the fracture was sustained—thus there is imparted valuable clinical information. Autogenous Bone Grafts is thoroughly discussed and technic described. The text is clear and the treatment fully outlined.

The work equals those in existence on the subject and excels in its "up-to-dateness." It really behooves every practitioner to be in possession of all the data obtainable on fractures, dislocations and their modern treatment. This volume will enable physicians to render better service to their fracture cases. As such it is recommended.

Miscellany

Some "Patent Medicines" for External Application.—The following statements of composition is indicated by the reports of various state boards of health, the government chemists and the A.M.A. Chemical Laboratory: Amarol, a "complexion beautifier," is composed of Epsom salt 95 per cent. and borax 5 per cent. Anti-Freckle Lotion (Gustin's contains mercuric chloride 1.5 per cent., alcohol 2 per cent. and water 96.5 per cent. Calocide, for "foot trouble," is sodium chloride 22.44 per cent., borax about 37.58 per cent., alum about 39.35 per cent., tannin small amounts. Cerol, which "cleans and clears the skin," is boric acid, stearic acid and perfume. Clearola, which will "whiten the skin," is sulphur. Cuticle Acid, to "remove dead skin," is alcohol 10 per cent. and oxalic acid 2 per cent. Derma-Royale for skin affections, is a dilute alcohol-glycerin solution with small amounts of camphor, myrrh, benzoin and possibly other aromatics in suspension. Eptol, a wrinkle remover, is essentially borax 37 per cent., soap and stearic acid 63 per cent. Fatoff was found to be essentially soft soap. Glorial Balm, a vanishing toilet cream, is composed of stearic acid, soap and borax 23.7 per cent., water 76.3 per cent. Gloriol Glowene, said to be a substitute for soap, is soft soap. Zemo, for eczema, pimples, dandruff and similar affections, appeared to be a watery-alcoholic solution containing methyl salicylate, thymol borax, tannic acid, glycerin, menthol and phenol-like body (*Jour. A. M.A.*, Oct. 16, 1915, p. 1365-7).

Lactopeptine and Elixir Lactopeptine.—Lactopeptine is sold under the claim that it contains pepsin, diastase, pancreatin, lactic acid and hydrochloric acid. In 1907 the Council on Pharmacy and Chemistry reported that Lactopeptine was practically inert—"essentially a weak saccharated pepsin," devoid of tryptic activity. An examination made by the Council in 1913 confirmed the previous findings. Nearly four months after publication of the last report, the manufacturers protested against the report claiming that Lactopeptine possessed pancreatic activity and contained "loosely combined" hydrochloric acid. The Council now reports that an examination of the market supply demonstrated that a few recently manufactured specimens showed slight (therapeutically negligible) tryptic activity, but that most showed none; the amount of hydro-

chloric acid was insignificant. Again declaring Lactopeptine and Elixir Lactopeptine ineligible for New and Nonofficial Remedies, the Council points out that, whatever the tryptic activity of the mixture, it is therapeutically useless. Mixtures of pepsin and pancreatin are irrational. The two substances are not indicated in the same conditions nor can they act together. Under physiologic conditions such mixtures are chemically impossible. In a liquid medium the two substances destroy each other (*Jour. A.M.A.*, Oct. 23, 1915, p. 1477).

The N. F. Imitation of Elixir Lactopeptine.—Nearly forty years ago the essential worthlessness of Lactopeptine was brought to the attention of the pharmaceutical profession. In spite of this knowledge the pharmacists have included imitations of Lactopeptine and Elixir Lactopeptine in the National Formulary under the titles Compound Powder of Pepsin and Compound Digestive Elixir. The *N.A.R.D. Journal*, devoted to the business rather than the professional side of pharmacy, defends the Compound Digestive Elixir on the ground that "physicians keep right on prescribing it." The pharmaceutical profession should consider that pharmacists will in the end loose the confidence of the medical profession and the public by the tolerance of worthless pharmaceuticals (*Jour. A.M.A.*, Oct. 23, 1915, p. 1467).

Cardui, the Story of a Nostrum.—Harper's Weekly (October 23) traces the growth of the Wine of Cardui business. The author, stated to have been employed by the manufacturers, denies that the nostrum will perform the many wonders claimed for it by the manufacturers, and says that there is one miracle that Cardui can perform—it can make money (*Jour. A.M.A.*, Oct. 23, 1915, p. 1466).

Camphor, Natural and Synthetic.—Though having the same chemical composition, natural camphor is levorotatory while synthetic is optically inactive, it being a mixture of levorotatory and dextrorotatory molecules. Synthetic camphor, used externally and in moderate doses internally, has been reported to have the same effect as natural camphor. The evidence is however unsatisfactory. The natural product being readily obtainable, there is no warrant for the therapeutic use of synthetic camphor until more conclusive evidence is at hand (*Jour. A.M.A.*, Oct. 30, 1915, p. 1555).

Swan's Rheumatic Bacterin (Mixed) No. 47.—According to the manufacturer, The Swan-Myers Co., Indianapolis, Ind., this preparation contains pneumococci, Friedlaender's bacilli and streptococci (polyvalent). The Council on Pharmacy and Chemistry refused to admit this vaccine to New and Nonofficial Remedies because there is no satisfactory evidence that either the pneumococcus or Friedlaender bacillus is concerned in the etiology of acute or chronic rheumatism or rheumatoid arthritis and no conclusive evidence that the streptococcus is an etiologic factor (*Jour. A.M.A.*, Nov. 6, 1915, p 1662).

THE ANTITOXIN TREATMENT OF DIPHTHERIA.

It is a generally recognized fact trat antidiphtheric serum has in large measure robbed diphtheria of the dread with which it was formerly regarded. In the twenty years since its introduction into therapeutics it has saved countless lives and given to the medical profession control over a disease in the presence of which the physician had previously been all but helpless. The value of diphtheria antitoxin, both remedial and prophylactic, rests upon so sure a basis that it requires no word of commendation. In the language of an eminent American pediatrist "no table of figure is so convincing to an individual as personal experience, and by this argument one by one the opponents of antitoxin have been converted."

What make of diphtheria antitoxin to employ is a question which, sooner or later, confronts every physician. It is a question that should not be answered "off-hand." On the contrary, it merits the most thoughtful consideration. Obviously, all antidiphtheric sera are not of equal merit. The antitoxin selected should be a product of established purity and potency—a product, moreover, that is backed by experience, scientific knowledge and adequate manufacturing equipment. Perhaps the name which comes most promptly to mind in this connection is that of Parke, Davis & Co., among the earliest and now the largest producers of diphtheria antitoxin. That this concern regards the business of serum production as one not only worthy of the highest skill and endeavor, but actually demanding it, is evident from this excerpt from a current announcement:

"When (in 1894) we undertook the manufacture of diphtheria antitoxin, we had one dominant ambition: to produce an antitoxin that should leave nothing to be desired—an antitoxin that the physician might administer at a critical moment with assurance that it would not fail him. In all the years that have since elapsed we have never once lost sight of that ideal. Diphtheria antitoxin that is carefully, scientifically, conscientiously made demands a large expenditure of time and money. The cost is amply justified. The value of a human life cannot be measured in dollars and cents. We produce the best possible antitoxin, and we spare no expense in doing it."

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Original Articles

LOCAL ANESTHESIA IN ABDOMINAL SURGERY.*

J. H. Jacobson, M.D.
TOLEDO, OHIO.

The improvements in the methods of producing local anesthesia have been so rapid and effective during the past decade that its use has been extended and is now successfully employed in many abdominal operations.

Advances which have made this possible have been the introduction of non-toxic anesthetic agents together with the discovery and employment of preparations of superenal extract. The combination of local anesthetic drugs with this extract has been one of the most important advances in local anesthesia. The local effect produced with the combination of these agents is an analgesia of sufficient intensity and duration, rendering surgical operations in reality painless.

The unpopularity of local anesthesia in the past has been due to incomplete analgesia which made the operation not only severe to the patient but extremely difficult for the surgeon. In fact complete and thorough work under the older methods was nearly always impossible and physicians were reluctant to perform operations under local anesthesia.

At the present time those physicians and surgeons who have given the subject of local anesthesia some study and have mastered the few principles which are so necessary for the proper employment of the method, do not have such unfortunate results.

Although the progress in the methods of local anesthesia has been great, the advances in general anesthesia have also been great. Thus we have witnessed the passing of chloroform as a routine anesthetic and its replacement by the open drop ether method. We have also witnessed the introduction of nitrous oxide gas anesthesia for prolonged surgical operations either alone or in combination with oxygen and ether. Probably the most important advance which has been made in the field of general anesthesia has been the "professional anesthetist." Although much has been accomplished to render general narcosis safe, it may yet be said that it still carries with it certain elements of danger. It has long been known to the members of the surgical profession that the mortality from the administration of general anesthetics is much higher than that usually given in our text books.

The principle advantage which local anesthesia possesses over all other methods, and the one which recommends itself for serious consideration is the all important factor of safety. Not only is this true of the medical profession but it applies to the laity as well, for in the writer's experience they have been quick to recognize the safety of local anesthesia and many patients have submitted to operations who would not have done so had such operations been proposed with general anesthesia.

As a result of the experience gained with local anesthesia the writer has come to the conclusion that no surgical operation should be performed under general anesthesia on any adult which can be performed equally as well under local anesthesia.

It has been said that the surgeon of the future will be as efficient in regional and local anesthesia methods as he will be in surgical technic and operative procedure. A surgeon who has learned the principles of local anesthesia soon finds a broader application for the method, and many operations which he would ordinarily do under general anesthesia he performs under local anesthesia.

As long as local anesthesia was being produced by the use of cocaine, owing to its toxicity it was limited to minor surgery although Schleich's infiltration method with weak solutions was applicable to some major operations. Some of the recent drugs used for local anesthesia are tropacocaine, eucaine, alypin, stovain,

*Read before Section on Gynecology and Obstetrics, Fiftieth Annual Meeting M.S.M.S., Sept. 1, 1915.

holocaine, novocaine and many others. Novocaine, on account of its solubility, its relatively low toxicity and non-irritating qualities is the agent, which experience has shown to be the best for the production of local anesthesia. It is employed in ¼, ½, 1 and 2 per cent. solutions and can be sterilized without destroying its action. The addition of adrenalin, owing to its constricting action upon the blood vessels is most important. Adrenalin not only makes the tissue bloodless and thereby materially limits the rate of absorption of the anesthetic drug but it also permits an increase in the strength of the solution and intensifies the anesthesia. The solution now most frequently employed is a ½ per cent. solution of novocaine with three to five drops of adrenalin (1-1000) added to each ounce of the mixture used. This is sterilized by boiling for three minutes.

With the novocaine-adrenalin solution we are able to produce local anesthesia in a manner heretofore unknown. The method has the advantage over general and lumbar anesthesia in that its employment is attended by no danger to life, the general condition of the patient is not disturbed, and the immediate post-operative pain which is always the worst during the first few hours, is relieved.

After major operations the patient can be given food, for vomiting seldom occurs. In my experience the only complaint of the patient during an operation under local anesthesia is that of a pulling or tugging, but no actual pain is experienced.

It is necessary that at least fifteen minutes should elapse from the time of injection to the beginning of the operation. This is of the greatest importance. When you consider that it takes about this length of time to put a patient under a general anesthetic, the slow action of the novocaine and adrenalin solution is no disadvantage. The amount of this solution which can be used is relatively large. From thirty to sixty cubic centimeters of a ½ per cent. solution will be found sufficient for most operations. I have used as much as 260 cubic centimeters without the least bad effect. The stronger the solution the less should be the quantity used.

It has been our custom to allay nervousness by the preliminary injection of morphine and scopolamine.

Regarding the technic of injection I can only emphasize the statement of Braun, who says that the whole secret of success in local anesthesia is, that "one must learn to feel with the end of the needle." One soon learns to differentiate the textures of the various tissues. The subcutaneous cellular tissues, fat, fasciae and muscle each has its own peculiar feel when punctured. The part to be operated is surrounded by a novocaine barrier, formed by injecting the solution through two or four needle punctures. The barrier may be circular, rhomboidal, square or pyramidial in outline and should entirely surround the part to be operated. The needle punctures are rendered painless by the formation of a wheal after the method of Schleich. The syringe and needles employed are those of the recording type with needles about three and one-half inches long. The solution should be injected as the needle is pushed into the tissue. In this manner puncturing large blood vessels is avoided. Before withdrawing the needle the deeper structures are successively injected.

The solution should be freshly prepared for each operation as this is essential to success. The solution being non-toxic, large quantities can be used.

The administration of general anesthetics in this country is better understood than in Europe and this may to a large extent account for the general increase in the use of local anesthesia in the continental clinics.

Braun gives us some interesting figures relative to the increase of local anesthesia in Europe.

At the surgical clinic in Heidelberg in 1906 local anesthesia was employed in only 11:4 per cent. of all operations (1917) this percentage in 1911, four years later had risen to 54.2 per cent. (2532). At the Krankenstift in Zwickau in 1908 there were 24.8 per cent. of all operations (1529) performed under local anesthesia while in 1912, 49 per cent. of all operation (1866) were performed by this method. The ratio of increase in the number of local anesthesia operations is steadily rising in all the large hospitals of Europe and to a considerable extent in this country.

The most recent report on the increase of local anesthesia is from the Dollinger clinic at Budapest, Hungary where 94.73 per cent. of all operations during the past year were performed under local anesthesia. This is the highest percentage thus far reported. Dollinger considers local anesthesia as the routine anesthetic for all surgical operations and general narcosis is used by him only as a supplementary measure.

The infiltration method of surrounding the part to be operated by the anesthetic solution is the method most commonly employed on

account of its wide range of applicable and because it requires no particular anatomic knowledge of the distribution of nerves. In this method the solution is deposited around the operation site, and if possible underneath the part to be excised or operated upon. In this country the term "blocking" is used to indicate this form of anesthesia. I have called this method the depositing of an anesthetic "barrier" around the part to be operated upon, as being more expressive.

A knowledge of the relative sensibility of various tissues and organs of the body is essential for the proper performance of operations under local anesthesia. Detailed descriptions of the sensibility of these various structures can be found in the works of Lennander, Block, Schleich, Braun, and others. In general it may be said that all parts of the body which receive their nerve supply from the cerebrospinal nervous system are sensitive in a more or less degree, to pain, while those organs which receive their innervation from the sympathetic nervous system are insensitive The abdominal viscera, the lungs, and the brain are insensitive. The skin, on account of its richness of nerve supply is probably the most sensitive organ of the entire body. The sensibility of the skin differs, the most sensitive being the finger tips and the least sensitive on the back. The subcutaneous cellular tissues have little or no sensibility. This is readily demonstrated by the introduction of the injection needle which can be moved about under the skin without producing pain. Only when the needle comes in contact with a sensory nerve does the patient complain of pain. The same may be said of muscles, tendons and aponeuroses.

It is a well known fact that in the days when operations were performed without anesthetics the chief complaint of pain was during the incision of the skin.

Regarding the sensibility of the abdominal organs the work of Lennander stands out as a classic. Lennander has shown that the parietal peritoneum is very sensitive to pain, that visceral peritoneum is insensitive. He also found that the mesentary is without sensation, but when it is put on the stretch by pulling it becomes very sensitive. It will thus be seen that care must be exercised in the proper anesthetization of the parietal peritoneum in performing abdominal operations under local anesthesia. The stomach, intestines, omentum, liver, gall bladder, and even kidneys may be handled without pain so long as the manipulation is not accompanied by dragging upon their attachments. In operations upon the appendix the amputation of the appendix itself is painless but when the meso-appendix is clamped or ligated, pain is produced which is referred to the epigastrium. This I have observed in a number of instances. The fundus of the uterus, ovaries and tubes are insensitive to pain although when the uterus is dragged upon, pain is produced.

In practical application of experimental work relating to the sensibility to pain of the various abdominal organs there are two facts which stand out conspiciously and act as guides for the successful employment of local anesthesia in abdominal surgery: 1. That the parietal peritoneum is extremely sensitive and painful to manipulations. 2. That intra-abdominal manipulations of the viscera are only painful when such organs are dragged or pulled upon.

So far no nerves have been demonstrated in the peritoneum. It seems quite certain that the peritoneum receives its innervation through the sub-peritoneal spaces. This can be demonstrated during the progress of local anesthesia operation for the peritoneum can be painlessly incised after the solution has been injected into the sub-peritoneal space. When the peritoneum is opened injections can also be made into the sub-peritoneal space from within out, in other words through the peritoneum itself.

Local anesthesia is particularly indicated in the presenec of alcoholism, nephritis, acute pulmonary lesions, myocarditis, etc. There are certain abdominal operations which should always be performed under local anesthesia; they are: all operations upon the abdominal wall, supra-pubic cystostomy, gastrostomy, jujunostomy, enterostomy, cholecystostomy in debilitated patients suffering from empyema gall bladder or severe jaundice from obstruction of the common duct, appendectomy in tuberculous patients and all forms of hernia (incisional, umbillical, ventral, inguinal and femoral) regardless of size or whether strangulated or not. In perforations from typhoid fever it is of particular value.

The writer has performed 140 abdominal operations under local anesthesia, 125 have been for the radical cure of hernia. Other operations were for intestinal obstruction, gastrostomy, suprapubic cystostomy, colostomy typhoid perforation and abscess of the liver.

I have also used the method for many miscellaneous operations, such as excision of benign tumors, removal of foreign bodies and opening of abscesses on the abdominal wall.

The operations for hernia have been without mortality and so far without a recurrence. For this reason the writer has gained the impression that owing to the high degree of relaxation of the muscles and fasciae during such herniotomies, a maximum of over-lapping and an accuracy in suturing is obtained which together with the absence of post-operative vomiting and straining, diminishes more effectually the possibility of recurrence.

Finsterer, Braun and others have combined the local infiltration of the abdominal wall with para-vertebral injections of the spinal nerves in order that anesthesia may be produced in the particular organ to be operated upon. Such injections permit the most extensive operations upon the stomach, kidneys, and other organs. By injecting the lower dorsal and lumbar nerves partial gastrectomy, for cancer of the stomach, gastro-enterostomy, cholecystectomy and nephrectomy have been painlessly performed.

Nephrectomy under local anesthesia has been successfully performed many times. In these operations it is necessary to make deep injections about the spinal nerves at their exit from the spinal foramen. The spinal nerves from the seventh dorsal to the fourth lumbar are injected with a ½ per cent. solution of novocaine and adrenalin. The lower intercostal nerves should also be injected.

Legeu performs supra-pubic prostatectomy under local anesthesia by first infiltrating the abdominal wall and after the bladder is opened a separate infiltration of the prostatic region. In this manner the operation can be completed without pain, with a maximum degree of safety to the patient.

Fowelin operated cases of chronic appendicitis under local anesthesia by supplementing the infiltration of the abdominal wall with injections into the illiac fossa and laterally along the peritoneal wall.

Reclus who is one of the pioneers in the use of local anesthesia in abdominal operations has extended the method to the removal of all abdominal tumors whose anatomic position is known. In this manner he has removed ovarian cysts.

J. C. Webster reports a series of twenty-five cesarian sections performed under local anesthesia. The patients were for the most part suffering from eclampsia. Local anesthesia in such cases is of great advantage to the patient on account of the serious damage to the kidneys usually present, which makes general anesthesia more or less hazardous.

No discussion of local anesthesia in abdominal surgery would be complete without some reference to the use of local anesthesia in combination with general anesthesia as advocated by Crile, Kocher and others. This combination is used for two purposes: first, to lessen the shock of the operation by cutting off all impulses from the operative site to the central nervous system, and secondly, for the abdominal relaxation which it produces. I have used this method many times especially in those cases where abdominal rigidity is a factor to be dealt with. In operations for intestinal obstruction where the abdomen is rigid, and greatly distented, the combined method of local and general anesthesia should always be used for it materially lessens shock and makes the intra-abdominal manipulation much easier.

DISCUSSION.

DR. SMITH: I think we are all to be congratulated on having had the opportunity of listening to this paper, for two reasons. First we have learned something about local anesthesia in abdominal work; second, we have had an opportunity of seeing these moving pictures which undoubtedly are going to have a great future in educational work in medicine. I think already the thing has gone beyond the stage when we can say that it is douhtful, it is really a sure thing; it is going to be used in illustrating many things in medicine, including operative work. To be sure the pictures do not show fully, hut they show many other things which the ordinary set of pictures do not show, and for that reason hrings vividly to our eyes the actual operation. Dr. Jacobson's pictures have the advantage that was not shown in some of the earlier moving pictures; he shows the operation, not the operator. Some of the pictures formerly made were evidently made with that intention.

Last summer I saw some pictures in Paris, Faure performing hysterectomy, that I think really were as good as seeing the operation itself, in fact we might, from seeing two hysterectomies at the table by means of moving pictures, say that they were quite as vivid, quite as clear to us as the operation itself.

In regard to the use of local anesthesia in our abdominal work, our experience has not been nearly as great as Dr. Jacohson's. We have had considerahle experience, and that has covered a great deal of the same type of cases to which he refers. All operations of the abdominal wall can be done to great advantage in this way, the more critical operations in the abdomen, especially obstruction of the howels, acute inflammation of all the abdominal cavity, and perhaps more especially the gall tract, or the biliary tract. We have not yet applied it to clectic work where more extensive manipulation would be necessary and in which a general anesthetic was not a distinct disadvantage, for local anesthesia has some distinct disadvantages which must he offset hy very great advantages. However, we believe in case of very critical patients, a man suffering for instance, from howel ohstruction, that it fills a long felt want. One may go into the ahdomen and correct the howel ohstruction, do it at his leisure, and the patient get off the table in as good condition as when he came on. That can hardly he said of any general anesthetic, whether gas or anything else. We have had occasion to see this time and time again, and now we never operate an obstruction of the bowels except under local anesthesia, where it is possihle to ohtain it. The infection of the biliary tract will also come under these cases, and it is to the greatest advantage, the patient suffering not at all from the shock, or the effects of the anesthetic and he is given every chance to get the full benefit of the operation.

I did not hear the first part of Dr. Jacohson's paper but I want to emphasize one or two things. One, the necessity of using anodyne with the local anesthesia. For this work we use either a dose of morphine, with hyoscine, or formerly used scopolamine somewhat, the patient not being rendered comatose, but very sleepy, for not only is the pain deadened, that is, eliminated or made nil, but the psychic effect upon the patient is much hetter. I think that most patients dread an operation without an adjunct, without anesthesia, and I think the effects afterwards must he thought of. Some of these patients, women especially, complain of the psychic shock of work done in this

way, so it seems to me it must be fully borne in mind and we must not let our enthusiasm in the use of this method get the upper hand of our common sense.

I do not know that I have anything more to say, except that I do not think it makes very much difference about the choice of anesthetic and the mixture. We use plain novocaine, 1 per cent. solution in the skin, and one-half per cent. below it. We tried the various mixtures and found that to our advantage. Novocaine is a simple affair easily obtained, easily kept, a short time at least, and we found that to be in our case the best.

DR. DAVIS: I just want to ask Dr. Jacobson if he has had any experience in necrosis of the muscle following injection.

DR. THOMPSON: I have seen a great deal of work done with local anesthesia by Kepler and a great many others, and I have seen a good many cases on the table that apparently suffered intensely, so I do not think you can select your anesthetic for everybody.

There is another thing that has to be considered, and that is the difference in the psychic excitability of an American or an Austrian. There is a great difference. You see people come on just like a horse or a dog and be anesthetized with local anesthetic and apparently not hurt at all. But you try it on a great many Americans and it is quite different. In one instance I operated for hernia and when I got through the patient was asleep. Just a grain of morphine. But you try it on the next patient and you are up in the air with the same technic Dr. Jacobson advanced. The same all over the world. I think that ought to be taken into consideration in selecting the anesthetic; our cases certainly ought to be well selected. You certainly cannot show the same proportion as in Austria, for instance.

DR. BROOKS, Detroit: Mr. Chairman, I think a great deal of the success of local anesthesia depends upon the attitude of the patient, and also upon the skill of the anesthetist. From what I see in my travels around the country I should hate to be operated upon in some clinics. At any rate I should want only local anesthesia, so that I could defend myself if necessary. We have been in the habit here, for the last eight years, of operating on a great many cases, using the methods mentioned in old people, people who are very sick, either entirely local or partly local anesthetics, with very good results? We could do all our work with local anesthetics if it was necessary. I have been using for the past three months the services of an expert man to give oxygen, and I would not want to depart from that. I have tried local anesthetics and I still use it, but I think for my work of general surgery that the gas oxygen anesthetic is the most ideal anesthetic for the general surgeon, if given by an expert anesthetist, as every anesthetist should be. I think we should not condemn local anesthetics because one practices one time or two and does not give it time to act. Sometimes they give the anesthetic and inside of a minute they will begin to operate on the man, if he stays on the table. It should be three or five minutes before the operation should begin. It would be better if more local anesthetics were used, because the surgeons who do these local operations have better training. They would not maul the patient so much, they would use a knife instead of scissors and probably the traumatism would be much less than if a general anesthetic were used. In fact, I think the local anesthetic will be found best in the hands of the best operative surgeons.

DR. JACOBSON: It is always very gratifying to get the various opinions of men who are surgeons, and I am sure I enjoyed these discussions very much.

In answer to some of these questions that have been asked, first I want to hear out what Dr. Brooks has said, that we do not want to use local anesthesia as a routine that would not be right. I think even chloroform has a place, although a limited one, and oxygen gas has a place.

I think all hernias can be operated under local anesthesia. As long as we can do it equally well under local anesthesia, we should use it. I do not think any general anesthesia should be used if we can use the local. I gave about sixty spinal anesthesias and one of those died so quickly that I have not used it since. Once in a while you can use spinal anesthesia, and it is the best anesthesia for certain purposes. I am sure a great many of you surgeons know men who have families, who otherwise are perfectly healthy, except having hernia, who would not be operated on for fear of the operation. These men would submit more readily to the operation with a local anesthetic than they do under general anesthesia. They have no fear, they are not afraid of the operation, what they are afraid of is the anesthetic. Now I think if, in the case of hernia, we could do away with this fear that discourages men in the prime of life to have their hernias operated, start that work and you will see that hernia work will increase and increase like everything.

With reference to the method, I will say this, as a general proposition, that with local anesthesia, the more experience you have, the better are the results. But I do believe any one beginning should not be in a hurry; if they will just wait they will get the best results.

Regarding the solution, I believe that is equally important. I would not care to use the twelve ounces as I mentioned in my paper of pure novocaine alone. I think that is dangerous. But if you use it with adrenalin, and the entire quantity absorbed over a longer period of time, it is not dangerous. So far we have not had the slightest toxic effect, this solution is not safe unless you use adrenalin.

Somebody asked the question whether we get necrosis of the muscle. There are two methods of local anesthesia. One is the Schleich method, the other the Braun. The Schleich method is used for minor operations. In the Schleich operation you anesthetize as you go along, and it is in that technic that you are likely to get necrosed muscle and have all sorts of trouble. In the other we anesthetize completely all the tissue or wall around the places that we are operating on; that is the Braun technic, and that is the one I think should be used all the time.

In regard to the difference in mentality of patients, I do not go much on that. I think we can use it in America as well as in Germany. While the German will say, "Sehen sie, meine Herren, wir sind doch mit Lokal-anesthesia durchgekommen," they will get through anyhow, they get through in spite of everything with local anesthesia but the idea is to render operations absolutely painless, so that the patients can go back and recommend it to others.

CANCER OF THE UTERUS.*

W. P. MANTON, M.D.
DETROIT, MICH.

This paper is a reiteration. Nothing particularly new can be said of cancer of the uterus until the cause of the disease has been discovered and a prophylaxis and remedy have been found but, as forgetfulness grows over what we know—like grass in the unplowed field—it is necessary that the mind be kept refreshed by repetition. Such is the aim of this thesis.

The latest statistics from the registration area of the United States show that cancer in all its forms is on the increase, and that during the decennial period 1901 to 1911, it augmented 25 per cent. Whether this increase is absolute or relative, depending on a better knowledge of the natural history of cancer and a more careful diagnosis of cases, matters little; it is undeniable that cancer has become alarmingly frequent and demands more energetic measures towards its eradication.

The often quoted figures of Welch indicate that, in the female, the uterus is the organ of predilection for this neoplasm; an organ readily accessible and easily reached for treatment.

Why then, do so many women perish from cancer of the womb?

One need not seek far to find two most potent reasons for this: one, because women, from false modesty, avoid examinations, and from ignorance or a taking of chances, permit the disease to advance beyond the curable stage;

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the other, the dormant, apathetic or negligent attitude of many in the profession toward one of the most serious and fatal of disorders.

Cancer of the uterus is an insidious disease rarely manifesting its presence until well established and often beyond the possibility of cure. On the other hand, taken in its earliest stages it is undoubtedly as amenable to cure as mumps or an ingrowing toe nail.

What then is to prevent the enormous mortality from cancer of the uterus from being stamped out, or at least reduced to that of one of the minor ailments?

It seems to us that the reasons advanced amply account for the failure in the past, and point out the way for greater successes in the future.

PREVENTION.

That prevention is of much more importance in the elimination of cancer from our death lists than the most thorough attempted cure, has passed beyond the realm of polemics. It seems quite certain that if painstaking and reasonable prophylaxis were as earnestly carried out in the instance of cancer as it is today in many other diseases—notably tuberculosis, smallpox, yellow fever and bubonic plague—the incurable cases now seen in clinic and consulting room, would soon become conspicuous by their absence. What is required for this is not only laboratory investigation, but a persistent propaganda of education among the people, a heralding of facts, not theories, that will seep to the lowest stratum of human intelligence.

Were such a thing possible, state legislation should be invoked, making it obligatory for every woman between the ages of thirty and sixty years to submit to local examination by a competent physician at least once in six months. In this way cancer of the uterus would be discovered in its incipiency, thorough treatment inaugurated and every prospect held out for its eradication and cure.

A light cannot be hidden under a bushel with the expectation that the house will be illuminated, and it is only through persistent publicity and education that the results hoped for can be achieved. The attention of women should be called, in season and out of season, to the frequency of cancer of the uterus, its seriousness and the ultimate results, inevitable if the condition is not attacked by proper therapeusis in its initial stage. The lay press and the magazine should be the vehicles through which this knowledge should be propagated and special articles and leaflets should be circulated by the physician among his clientele. We have no sympathy with those illogical and sentimental recalcitrants who fear that such publication would lead to mental and nervous stress, direct morbid attention to the sexual organs, and alarm and terrorize women into false beliefs and fears.

Surely every woman would unhesitatingly accept a possible temporary mental perturbation rather than drift unwittingly to a painful and loathsome death. And, if by putting woman in knowledge of the dangers which neglect invites, she can be persuaded to seek advice in time, any amount of terrorizing would be justifiable for the saving of valuable lives to home and community.

We recall the instance of an elderly woman who bemoaned the pelvic troubles of the present generation, concluding her remarks with the statement that she had never suffered from such disorders. Within six months this same woman was dead from cancer of the uterus, and a valuable life sacrificed to ignorance.

One of the most effective crusades against cancer of the uterus can be waged by the family physician, upon whose shoulders rests a tremendous responsibility, and whose opportunities for spreading the gospel of health are unlimited. While the wise man will avoid uterine tinkering, he will be alert to recognize in all his women patients during the climacteric years potentialities for future evil, and will be put on guard when such conditions as menorrhagia, intermenstrual bloody discharge, leucorrhoea, endometritis or an unhealthy state of a cervical laceration presents, and by digital and speculum examination, assure himself and reassure his patient that the condition is benign.

Mild disorders of this nature which do not readily yield to local treatment should not be carried along indefinitely, but be immediately curetted, the cervical laceration repaired, and scrapings and chips submitted to the pathologist for microscopical examination. If beginning malignancy or a suspicion of this, be found, hysterectomy should be done without delay. When the possibility of malignancy is suspected before the performance of a minor operation, it is most desirable that the specimens removed be examined microscopically at the time, and if cancer is found the radical operation carried out at the same sitting. While frozen sections are not the best for diagnostic purposes, the rapid spread of cancer following traumatism to the uterus, makes it desirable that no delay ensue before removal is undertaken. The fol-

lowing case which came to our clinic at Harper Hospital well illustrates this point:

Mrs. P. was referred from the Polyclinic to the Gynecological Department for surgical treatment. Under ether, examination showed that the upper portion of the vagina was somewhat stiffened and slightly nodular at the cervical junction. The cervix was short, the edges of the os thin, and a fibroid polypus presented at the opening. This was slightly ulcerated, possibly from friction. The body and fundus of the uterus was somewhat elongated and considerably enlarged, but the organ, which was deviated to the left, *was perfectly free and movable.* A small piece was snipped off from the cervix and sent to the laboratory for examination. In a few days the report came back that the condition was carcinomatous spreading by contact.

Abdominal section was performed just seven days from the original examination. The entire uterus was then found to be bound down in a mass of dense material, the broad ligaments were infiltrated, and the pelvic glands greatly enlarged. In this case the rapid extension of the malignant process precluded even an attempt at radical procedure. In the consideration of prophylaxis the exceeding liability of fibroid growths to become associated with malignant development must not be forgotten. A recent observer has placed the concurrence of the two at 20 per cent.—a positive assurance that these tumors can no longer be looked upon as harmless and benign, but growths whose presence is always a serious menace to the host, and which demand removal.

OPERATIVE CURE.

As already stated the early recognition of uterine cancer and the immediate ablation of the invaded organ promises most satisfactory results. Under these circumstances vaginal hysterectomy seems to offer all that is necessary. One of us has a patient now living after nearly twenty-five years following a Baker high amputation with thorough cauterization of the uterine shell with the Paquelin. With a better knowledge of technic, however, this procedure is not to be recommended at the present time. Another case in which the uterus was removed per vaginam lived fifteen years, finally perishing of pneumonnia. A third case was free from recurrence when last heard from ten years following vaginal hysterectomy.

It has been repeatedly pointed out that metastases to the neighboring aortic and pelvic glands in the early stages of uterine cancer is the exception and not the rule, so that if the Schauter method of vaginal extirpation of the womb be employed and a sufficiently wide portion of the ligamenta lata be included in the operation, this is all that is required. Wertheim himself found only forty-one cases in 500 in which the glands were involved, and the statistics of other careful observers are in accord.

Extension in the majority of cases of uterine cancer appears to be by progressive invasion of neighboring structures; when this has occurred the abdominal route of Wertheim will undoubtedly give the best results. Our experience with this operation has, however, been disastrous in every instance, the patient either succumbing at once or dying from recurrence within a short time. Wertheim's own results, 53 per cent. of recoveries, exclusive of primary deaths, furnish a most encouraging outlook for operable cases, and offers a brighter prospect to patients suffering from this terrible malady.

32 Adams Avenue, West.

CONSERVATIVE SURGERY OF THE OVARY.*

J. H. Carstens, M.D.
DETROIT, MICH.

When we began to make abdominal surgery twenty-five or more years ago, our principal operations were for severe dysmenorrhea and profuse menstruation. Batty's original operation was for the purpose of bringing on the menopause, to stop uncontrollable painful monthlies. Then we operated for nervous conditions, epilepsy and hystero-epilepsy, and for tubo-ovarian abscesses, (Lawson Tait). The failure to cure our cases in these conditions, generally were due to imperfect removal of ovarian tissue. The adhesions and contractions would permit the formation of a very short pedicle, and to prevent the ligature from slipping, only half of the ovary would be removed, and thus enough left to functionate for years to come. I well remember of calling attention to this point, and urging great care in removing every particle of ovarian stroma. and that a little measly ovary or a piece, would cause more trouble than its complete removal. I was the more impressed to make this remark, as within one year I had three cases of abdominal hysterectomies, where I did not remove the ovaries, that afterwards developed ovarian tumors, and two of these patients were physicians' wives.

But when in the course of time, the general

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surgeons who were not gyneeologists, indiscriminately removed the ovaries, especially in young women, we began to call a halt, and as we learned more about internal secretions our eheck was still stronger, and we began to go perhaps too far in the other extreme, trying to preserve ovarian tissue, which should have been removed.

It, therefore, takes great diserimination to know how far to go, and just where to draw the line. I think we all agree that in young women, espeeially, we should be extremely conservative, and I tell young women with pustubes or ovarian tumors, that I shall preserve as much ovarian tissue as possible, but that in the course of time, trouble may again develop, and that they may need another operation, that they better take their chances, they may never need it, but they will be a great deal better after a conservative operation.

In the many abdominal and vaginal hysterectomies I have performed, I have preserved at least one ovary, and although sometimes trouble has again developed, and the woman has been subjected to a second operation, these cases are few. Why I should have had so many in my early career, I really never could find out. Of course, there are cases with nervous symptoms, epilepsy, inclination to insanity, good for nothing people, on whom we may be justified to operate radically, because for the good of the race, they should not propagate, still these are comparatively few and far between.

What makes me angry is to see inexperienced men removing the ovaries, and sometimes also the uterus in young women, on account of pain in the pelvis or some painful menstruation. The absolute ignorance and carelessness and superfieial investigation of some would-be surgeons, is most lamentable. I have seen young women twenty years old, that had all their pelvic organs removed, patients I had examined and treated previously, and knew that they would be relieved by ordinary treatment without surgery. Many of these cases are purely hysterical, although they run from one doetor to another, but sometime or another they will find a doctor who has the right mentality to manage them, and restores them to health without operative interferences.

In faet, if you will go back and see what was said about these cases thirty years ago, and under what conditions we would operate then, you will find that we were very conservative, that only the most chronic eases, that had been subjected to years of treatment of all kinds, without avail, were subjected to operations, and that we were only justified to operate after all other means of treatment had absolutely failed. The profession at that time would not stand for anything else. However, now with our modern aseptic surgery, where the danger to life is so little, and where people have become used to hearing about operations, it is easy for men whose diagnostic aeumen has not been properly developed, to persuade patients to have any kind of operation, even when it is not neeessary. I am making a plea for the young women. When a woman gets to be forty or more years old, it does not make much difference as a rule, but even in those eases great care should be taken, and the tumultuous changes of the menopause can be prevented by a preservation of at least some ovarian stroma.

Many of the operations are performed for menstrual disorders, and I have repeatedly shown that these cases are most frequently caused by diseased or abnormal conditions of the *uterus*, and can be relieved by a stem pessary, by curettage, the shortening of the ligaments, or Gilliam operation. Although, they have pain in the sides, it is not due to the ovaries. It takes a long time to root out the impression, "trouble of the ovaries."

Now, in these kind of eases where the flowing can absolutely not be stopped or the pain controlled, and the menopause must be established, after complete failure of long continued ordinary treatment, it is a great deal *better to remove the uterus* either abdominally or vaginally, then to remove the ovaries. In a supravaginal hystereetomy, that is by leaving in the cervix, the size of the vagina is generally preserved, and senile atrophy will not take place as it does when the ovaries are removed. This senile atrophy of the vagina after ovariectomy is another serious objection to the complete removal of the ovaries.

Therefore, I want to again emphasize most emphatically, that specially in menstrual disorders requiring the establishment of the menopause, the patient should be subjected to *hysterectomy*, and *not* to the removal of the *ovaries*.

I would say in conclusion to these few remarks on

"CONSERVATIVE SURGERY OF THE OVARY."

First.—In all women under forty, every effort should be made to preserve some ovarian tissue.

Second.—Otherwise incurable eases requiring the establishment of the menopause, should be subjected to hysterectomy and no ovariectomy.

Third.—All cases should be carefully examined, and under observation for some time, before subjected to an operation.

Fourth.—In fact, no cases should be operated upon until after consultation by experienced men.

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DISCUSSION.

DR. ABRAMS, Dollar Bay: Whenever Dr. Carstens reads a paper he always reads that paper with his surgical apron on, and it is always important for any and all of us, I fancy, who are doing gynecological work, to pay strict attention to what he enunciates. I wish to call attention particularly to one thing that he has just mentioned, and that is the use of his stem pessary treatment. Since I heard him read his paper before an American Gynecological Society some years ago upon this subject I have had occasion many times to use this stem pessary, and I have heen surprised and astounded at the results that we get from the simple use of the stem pessary continuously used, not for a day or two, or a week or two, hut as Dr. Carstens himself recommends, over a long period of time.

Then there comes another important point in this discussion. Conservative surgery, let us remember is not always conservation of the physiological action of the parts. Let us get that into our heads, so that hy leaving in an ovary we may he doing conservative surgery, but we do not conserve the ovary. The ovary is not always of very much use. There are certain types of diseased ovaries, where we have a large cyst in the ovary, we can dissect out that cyst, whip over the ovary with very fine catgut, and it may he preserved. But in a great majority of those cases you will find after a year or more, that you will have to do a secondary operation for the removal of the ovary.

I realize very acutely what the doctor says in regard to the preservation of the menstrual function in young women. I have in mind a woman that I operated on a few days ago; ahout a year ago I operated on her for lacerated perineum and appendicitis and in the examination I found a diseased, ripe ovary, very much diseased, and I took it out. A few days ago she returned to me with a pain in the left side, headaches, all that train of symptoms. On reopening the ahdomen I found more than half of the ovary which was perfectly normal the year before, had become cystic. I resected that and left that ovary in. Now, just what is going to happen there I do not know.

Another point I wish to call attention to, and that is this. In the great majority of the cases in which you do resection of the ovary, that is only the preliminary part of the work. You must get that ovary out from its dependent position, you must raise it up in some manner or other, so that you can preserve its circulation. That is the important point. Most of the ovaries go back after resection, in the great majority of cases because we do not pay attention to this particular point.

DR. CARSTENS: There is really nothing to say, hut what I plead for is the retention of ovary secretions in the young women, that is the principal thing, something that we have learned since then, and we ought to try to save ovarian tissue, and if you tell the patient and say, "Look here, you may have to have another operation, but I am going to retain some of the ovarian tissue, that is the way I would do with my wife or my daughter, and you take some chances," they will submit to it. If they have trouble in the future they will not hlame you, but if you promise everything and do not keep anything, you will have trouble.

A PRELIMINARY REPORT OF COMMITTEE ON BACTERIN AND SERUM THERAPY IN DISEASES OF THE EYE, EAR, NOSE AND THROAT.*

Wilfrid Haughey, A.M., M.D., Chairman.
Battle Creek, Mich.

The bacterial theory of the causation of disease is one of the brilliant advances in modern medicine, but is not a new thing. We read in the ancient writings that the physicians of the Alexandrian school taught that the causative factor in most of the infectious diseases was "something which grows within or without the body." Recently in an article on the civilization of ancient peoples the claim was put forth that the knowledge of the etiology of disease in the days of ancient Babylon, at a time estimated at ten thousand years ago, was nearly as minute in regard to the bacterial cause as that of our own day.

The most natural result of a knowledge of the bacterial cause of disease is the attempt to fight these bacteria. Koch was one of the first to propose bacterial vaccine therapy in the modern sense. However, this immunization method of combating disease is again not a new thing. It is reported that Mithridates who lived in the century before Christ immunized himself against the poisoned arrows of his enemies by taking gradually increasing doses of the arrow poison. Jenner, while not knowing what he did, in reality developed something strikingly similar to modern vaccine therapy in his vaccine for smallpox.

Since Wright's epochmaking reports the use of bacterial vaccines has been advocated for everything in the gamut of human afflictions, almost, and naturally the results were not what had been hoped. However in the past few years the methods of preparation of vaccines, and the methods of administration have given us a valuable adjunct to our other means of combating disease.

Most workers advocate the use of autogenous vaccines in every case where it is at all possible. The use of stock vaccine seems necessary in many cases, and if a careful bacteriological examination is made, as it should always be, we believe good results will usually be obtained. However, this bacteriological diagnosis is not always possible, and many practitioners relying upon the general symptoms and characteristics of the suppurative or inflammatory process make a guess as to the causative germ. A mixed vaccine is then given in the hope of striking the nail with one of the constituents and both the physician and the patient wonder why the hoped-for result is not forthcoming.

The opsonic index and negative phase, so-called, which a few short years ago were the bugaboo of those desiring to use vaccine therapy are not now feared. We instead watch the general condition of the patient and of the disease process, guiding our dosage, and the frequency of administration by these conditions.

*Presented to Section on Ophthalmology and Ootolaryngology, M.S.M.S., Fiftieth Annual Meeting, Sept., 1915.

The first attempts to use baeterial vaccines in the treatment of diseases of the eye, ear, nose and throat were rather discouraging. Of late however, more study has been given to the flora of the parts, and workers in this field are really getting good results. This does not mean that every case treated is cured, but it does mean that a sufficiently large number are cured or improved to make the treatment decidedly worth while.

Until very recently the teaching has been to use bacterial vaccines only in subacute or chronic cases, but observers are now advocating the use of vaccines even in the acute stages of the infections.

In the use of vaccines we should not neglect the other means of treatment at our disposal. We do not use vaccines in every discharge nor in every condition. When we are unable to diagnose the germ or set of germs responsible, where there is necrosis or when we are unable to secure satisfactory culture for the preparation of autogenous vaccines we do not give vaccine treatment. It has become the popular thing with many to in using vaccine treatment suspend all other treatment, so as to, as they say, "Try out the method." If you had a bad heart case would you when giving digitalis, for instance, suspend all other treatment so as to see if digitalis is any good in heart cases? Vaccine treatment is simply another therapeutic resource, and should be used the same as other treatment as a help or an additional means to an end. This treatment should be selected and administered with as much care in selecting cases as any operative or other therapeutic measure.

In all work requiring the application of exact science, and especially in vaccine therapy the importance of the personal element must not be lost sight of. In the use of stock vaccines the bacteriological diagnosis is of paramount importance. For autogenous vaccines the cultures must be properly taken to insure that no extraneous germs are unintentionally admitted. The vaccines must be properly made. There is nothing more easy than to spoil an autogenous vaccine in making it. Heat is used to kill the germs, but heat also ruins the vaccine. A careful application of just the proper amount of heat for the proper time will produce the best results.

Workers in the eye, ear, nose and throat specialties have been using bacterins in treatment for several years. Many excellent papers have appeared during the past year and the writer does not remember a single one who condemns the method of treatment. Some are not using it as much as formerly and many are using it much more than formerly.

The question of stock or autogenous vaccines has been discussed pro and con. We have attempted in this report to find some exact data upon this subject but our store of information is as yet too small for final conclusions. We believe with Kyle that it is much better to use a stock vaccine prepared by one of the standard laboratories and after a careful bacteriological examination, than to use autogenous vaccines prepared by an inexperienced laboratory worker.

With these general remarks the writer would add that circular letters were sent to thirty men throughout the state asking for results of bacterin and serum therapy. It was late in the year and a sufficient number of replies to justify us in drawing final conclusions were not received. All who had reported seem to feel that they have secured desired results. The majority use mostly autogenous vaccines. The reports for autogenous vaccines show a little better results, about 4 per cent. than those for stock vaccines.

The writer personally has used both stock and autogenous vaccines with the advantage in favor of the latter. He has secured marked results with stock vaccines, especially where he has been able to carefully diagnosis the inciting organism. He has in most cases used the stock vaccine while having autogenous vaccines prepared.

During the time of this investigation the writer has used autogenous vaccines in fourteen cases with eleven clinical cures and three improved. He has used stock vaccines in fifteen cases with twelve clinical cures, one improved and two not improved. He has used vaccines in otitis media, subacute and chronic, mastoiditis, ethmoiditis, frontal sinusitis, rhinitis, pharyngitis, tonsillitis, blepharitis, and furunculosis. One failure was in episcleritis and one in a chronic otitis media.

We have received twelve replies to our circular letter of which five are in sufficient detail for tabulation. These replies represent Drs. Bernstein, Campbell, Baker, Odell and Haughey and cover 207 cases in which vaccines were used. The results obtained by each individual correspond to a striking degree. There were eighty-seven acute cases and 120 chronic cases represented. The following conditions are specifically mentioned: Chronic mastoiditis, chronic ethmoiditis, infected sphenoidal sinus, acute and chronic otitis media, infection of auditory canal, acute and relapsing rhinitis, chronic sinusitis,

pneumococcus ulcer of cornea, conjunctivitis, blepharitis, pharyngitis, episcleritis, tubercular otitis media, etc.

Autogenous vaccines were used in 72 per cent. of cases with 63 per cent. of clinical cures and 20 per cent. improved, making 83 per cent. benefitted and 17 per cent. not improved.

Stock vaccines were used in 28 per cent. of cases with 79 per cent. clinically cured or improved and 21 per cent. not improved.

In 85 per cent. of cases investigation was made of the probable pathological germ present.

Three of these reporters believe better results are obtained when the infection is staphylococcic and all state that their experience gives them faith that vaccines have distinct therapeutic value.

DISCUSSION.

DR. ANNA O'DELL, Detroit: I have made a few notes of cases of chronic arthritis following acute attacks. In each case chronic deforming arthritis was present. One case was that of a woman, fifty-four years of age, who had had a tonsillotomy twenty years previously. The stumps were small and buried, but when disclosed by pressure were found to be full of pus. The vaccines in all my cases were made by Parke-Davis and Company, the tonsils being taken out under a local anesthetic and sent to Parke-Davis and cultured by them. In this particular case the vaccine contained one billion of the staphylococci and five hundred thousand of the streptococci. That woman had had a very acute phase of her deformity for the last two years. She was not able to comb her hair. The internist who gave the vaccines reported the improvement as quite marked. She measured her improvement by the fact that she could comb her hair within two or three months after the vaccines were used.

There was also the case of a woman who had had extensive treatment by many men all over the country. This case was quite similar to the other, except that the deformity was not so great—a younger woman of forty-five. Each of these cases had had acute attacks of tonsillitis quite a good many years before, but were not having acute attacks perhaps for ten or fifteen years. The vaccines in the second case contained twenty million streptococci, one hundred million micrococcus catarrhalis, four hundred million of the bacterium of the colon group. Parke-Davis put question-marks after the streptococcus and colon, the identification of those organisms not being complete. This case was the only one to whom I gave the vaccines. She was a relative, and asked me to do it. I have been giving her vaccines for the last nine months, once a week, a c. c. of that mixture. She is a very intelligent woman, and says that the attacks of acute pain in the joints and the other joint symptoms, have been very much improved. She has taken very little aspirin since taking the vaccines, although prior to that time she was very dependent on it.

Another case was that of a young man of twenty-two, who had had an acute arthritis when twelve years of age. Since then his joints had been stiff and painful at times. In this case there was no history of tonsillitis. He had had a Neisserian infection three years ago, and had been treated with Neisserian vaccines for the joints, with no results. His vaccine was composed of a micrococcus and streptococcus; in other words, two varieties of the micrococcus and two varieties of the streptococcus, a billion of each in a c. c.

The advantage of having so large a number of the organisms to the c. c. is that one can use the vaccine a much longer time. A tuberculin syringe is used, graduated in one-tenths. By standardizing the dose in that way one can start with the one-tenth and work up, which is much more convenient.

I think it is interesting to note that there is the failure sometimes to differentiate the different members of the streptococcic form. As you know from the word of Rosenow, we have the streptococci of endocarditis, arthritis, etc.

I wish to speak of one case of gastric ulcer that I had, in which I did not think of it in time to give the dosage of vaccine, but I understand that under vaccine treatment that patient is improving.

There was also a case of a man, in whom a diagnosis of tuberculosis had been on account of loss of weight and certain physical signs in the lungs. Quoting from the report of the internist taking care of him: Both aspices show slight changes in expiration, as of old inflammation; no rales; suspicion of tuberculosis because of loss of weight and colds. This man's vaccine contained a micrococcus and a streptococcus. Parke, Davis reported that one micrococcus and one streptococcus predominated. That vaccine was put up in the standardized large number of germs to the small amount, six hundred million to the c. c. Whether due to the vaccine or not, that man has made a remarkable recovery. He gained in weight, health and general appearance, has shown remarkable improvement.

DR. L. J. GOUX, Detroit: My report will have to be very informal and to the point. I have had very few notes to make on this subject, having received late notification, I presume, like the rest of the members of the Committee, so I had to depend on my memory of the cases. I took the cases, however, in which I had had cultures made, so as to determine the character of the infection, and I could recall about fifteen cases that I have used it in in the past year. My experience in one case was extremely satisfactory, and Dr. O'Dell's report makes me feel very much encouraged in taking care of a certain class of cases. I had a child of five years of age brought to me suffering with a good deal of pain in the cheek. In her case I was able to diagnose an abscess of the antrum. I learned incidentally that the child was sufferiug a great deal from arthritis, which had been coincident with the development of the pain in the face. She was a difficult child to take care of, afraid of anything that was done for her, so I determined to use vaccines without resorting to any other treatment. She got one-quarter c. c. of the mixed vaccines about every third day. There was immediate improvement from the very first injection, and there was only a matter of a few weeks until that child's antrum trouble had cleared up, her arthritis was all gone, and apparently this child was perfectly well.

The other cases I have had cover about the same classification as has been read by Dr. Haughey, abscesses of the siuuses, middle ear, and furuncles.

In three of the cases I had autogenous vaccines made, and I cannot say that there was any more improvement from the use of the autogenous vaccines than from stock vaccines.

In the other cases I used stock vaccines, and while most of them improved, the treatment was combined with the usual treatment in these cases, and it is very difficult to determine just how much the improvement could be credited to the use of the vaccines, but I feel in looking over the list of cases that I have taken care of, even if I had had negative results in all of the other cases, the experiment was well worth the effort in this one case of arthritis, in which the child recovered, and had no other treatment except the vaccines.

One other point: In cases of children with glandular nodules in the neck, where it is difficult to say just what the etiology is, I have used the mixed vaccines—where there was apparently no tonsillar trouble—and have had very good success with the use of the stock vaccines in these cases.

DR. V. A. CHAPMAN, Muskegon: I would like to ask Dr. Goux what stock vaccines he used?

DR. GOUX: Sherman's mixed vaccines.

DR. JOHN G. HUIZINGA, Grand Rapids: If the report of last year has brought out such a wonderful symposium at this meeting, what may we not expect when the Committee brings in a full report? I think the reports to which we have listened are most wonderful. The symposium has been valuable to me. I have been deeply interested in this subject, and I think it was on my motion last year that this Committee was appointed, following a little discussion on Dr. Odell's paper.

I want to call attention to one unfortunate matter in connection with a case I had of mastoiditis that was allowed to come to operation at too late a date, where meningitis had already set in, and the patient died. The question there was the use of vaccine or serum, and I am glad Dr. Camphell called attention to that fact, because I think it is exceedingly important. In this case we ordered the antistreptococcus serum. We made a very imperfect examination with the microscope, but that seemed to be the predominating germ. We telephoned to the drug store for the serum and the drug store promptly sent up the vaccine. I had left instructions with the nurse to inject the entire amount as soon as it came. The nurse, not knowing the difference between the vaccine and the serum, and the druggist not knowing the difference, the dose was injected, the temperature rose to 106°, and the patient died. I went over to the drug store, a prominent one in this city, and asked the clerk what he had sent down there, and he said, "Just what you ordered." I said, "I ordered the serum. Let me see a box of your serum." He went all through his stock and there was not a box of serum. I asked what he sent, and he showed me a box of vaccine. I asked

him what was the difference between a serum and a vaccine, and he asked if they were not the same. I went to the owner of the store and laid the case before him, and of course the young man received a censure. A few days later I called him up again and asked for antistreptococcuc serum, emphasizing it over the telephone, telling him I wanted it quickly. He again sent over the vaccine. This time I was on the lookout for it.

It seems to me that that unfortunate experience should receive a little consideration. I think a little education along this line with the druggists who are handling such supplies is entirely in order. They should be in one way or another informed that there is a difference between a vaccine and a serum.

I have been interested more particularly in the application of this vaccine treatment in cases of atrophic rhinitis. I have treated seven or nine cases, I forget which, in the last year along that line, some with indifferent results, hut three of them with very satisfactory results.

My report of one case last year was questioned by one of the members, and so it rather stirred up the Dutch in me, and naturally I wanted to see whether I was right or wrong, and so made a very careful scientific study of every case that has come to my office along that line, and there are certainly three cases in which this method of treatment has been most satisfactory, the results in two of them seeming to be a cure. How long this cure will last, I do not know; it is too early to determine; but I will say that at the present time there is certainly a clinical cure.

So along this line I would be very much interested in the work of the Committee if they would look into the matter of the efficacy of this treatment in that form of cases. In connection with that, I might say that in the last issue of the Journal of the American Medical Association there is an exceedingly interesting report of the work done by Hoffer and others. It seems that the particular germ calls for a rather new view of whether atrophic rhinitis is just exactly what we have been considering it to be.

I want to thank the Committee for their work.

DR. GEORGE E. FROTHINGHAM, JR., Detroit: I would like to ask Dr. Huizinga what kind of vaccine he uses?

DR. HUIZINGA: I have only faith in the autogenous vaccines. I never have had faith in stock vaccines. I have only had indifferent results with them, and so I depend entirely on the autogenous vaccines.

DR. E. W. E. PATERSON, Grand Rapids: I appreciate this discussion very much, and was glad to hear what Dr. Goux said about stock vaccines. In several cases I have had very good success with stock vaccines—mixed vaccines. I recall four cases of laryngitis in which I was more than satisfied; also one of iridocyclitis. In this last case I knew that I was not getting anywhere in the treatment. The patient would not own to any exposure or infection, but his physician informed me of it, and we used an antigonococcus vaccine with splendid results, and brought the eye to normal, when it was practically blind. His vision in the eye was about one per cent. at the time we began treatment.

Those cases have encouraged me in regard to the stock vaccines. I have used them in several cases of catarrh and otitis media. I rather favor stock vaccines. Of course, in the desperate cases I would favor making an autogenous vaccine, but would not discourage the stock vaccine when we are not prepared to make the autogenous. Some of the cases do not warrant it, and if the stock vaccine carried you through that is sufficient. Of the four laryngitis cases of which I spoke, one had an almost complete aphonia, which had been present for quite a long time.

DR. STANLEY G. MINER: The Chair would entertain a motion that the Committee he continued for another year. And the Chair would also like to make an explanation, that it supposed that the resolution to appoint a committee was the result of Dr. Baker's Address, and did not know that Dr. Huizinga was the proposer of the resolution, and he, being so interested, it would seem only proper that his name should he added to that Committee. He seems to have done a great deal of work, and the Chair would be most pleased to entertain a motion to that effect. It is the opinion of the Chair that the Committee should be continued as constituted, with the addition of the name of Dr. Huizinga, the Committee to convene on the first day of the meeting, and report on the last day.

This question has been going on long enough, and ought to be placed where we will know something about it. In septic conditions of the pelvis I find that gynecologists quite universally agree upon the utility of vaccines, and that is the only branch of medicine that is agreed. As Dr. Campbell has stated, if it is good elsewhere, we cannot see why it should not be very useful in ophthalmology, and oto-rhino-laryngology, except that in our specialty the primary infective organism is lost after thirty days. So how are you going to make the autogenous vaccines? The other trouble in all acute troubles is that it takes from six to eight days to have an autogenous vaccine made, and you have to use the stock vaccines first.

Personally, I have had quite a little experience during the last two years, and I think Dr. Campbell's paper has been very useful in marking the dsitinction between a serum and a vaccine. Serum supplies anti-bodies. Vaccines stimulate anti-bodies already there to combat the septic infection. Using it from that standpoint, where the patient, as Dr. Campbell has so ably stated, has no reacting powers because of continual irritation of the micrococcal organism in the blood or lymphatic stream, it is necessary there to gradually build up the reconstructive ability of your patient by the use of a serum. In the other condition, where that lack of reacting power does not exist, it seems to me the vaccine must be the potential remedy, if of any use at all.

(Moved by Dr. L. J. Roux, Detroit, that Dr. Huizinga's name, be added to the Committee. Seconded and carried.)

(Moved that the partial report of the Committee be received, and that the Committee be continued, to report at the next annual meeting. Seconded and carried.)

HEART DISEASES IN CHILDREN.*

WALTER J. WILSON, JR., M.D.
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In 1914, out of 592 patients admitted to the medical wards of the Boston Children's Hospital, there were eighty-five heart cases, twelve of congenital heart disease, thirty-six of aeute endocarditis, thirty-two of ehronic valvular disease, one of aeute cardiac dilatation, two of serous perieardiris and two of adhesive pericarditis. During the same time, ninety-two patients with heart disease in much the same ratio, were treated in the out-patient department out of a total of 2697 medieal eases. Of the total numbers treated, a little over 5½ per cent. were therefore heart eases.

In the Children's Free Hospital of Detroit, in 1914, eighteen heart eases were observed out of a total of 406 medical cases, a little short of 5 per cent.

When in 1906, Norris published some statistics he had gathered from various sources, it was stated that in the Children's Hospital of Philadelphia from 1887 to 1905, out of 11735 admissions there were 158 eases of heart disease or 1.4 per eent.

At the Children's Hospital in Boston among 1298 admissions there, twenty-six cardiac eases or 2 per cent.; at the Great Ormond Street Hospital in London for Siek Children from 1889 to 1904 among 27950 admissions there were 820 cases of heart disease or 2.9 per eent. It would appear from a comparison of the earlier and later statisties therefore, that either more frequent diagnoses are being made today, or that ehildren are more suseeptible to heart disease now than formerly. The former contention is more likely the eorreet one, as often

*Read before the Section on Medicine M.S.M.S., Sept. 2, 1915, Grand Rapids.

in previous years a so-called complete examination of the child was made without any attention being given to the heart.

As to the age incidence, Holt states that under three years of age acute endocarditis is very rare, not a single instance being recorded in a series of 1000 autopsies under his observation. From the third to the fifth years it is not so rare, and after five it is quite common. Foetal endocarditis, it is to be remembered, is one of the most important causes of congenital malformations.

In considering heart disease in children a few points must be considered. The position of the heart in infants is more horizontal and it is higher in the thoracic cavity. The apex is higher and farther to the left. The apex if not more than one-third inch outside the nipple line is not abnormal in a child four years of age or under. From four to nine years of age the apex lies on the nipple line, while after thirteen years of age it should invariably be inside the mammary line. The apex is found in the fourth intercostal space during the first year, from the first to the seventh year in the fourth or fifth space, after the seventh year usually and after the fifteenth year always in the fifth space. The pulse, from the age of six to twelve months, is at the rate of 105 to 115 per minute, from two to six years, 90 to 105 per minute, from seven to ten years 80 to 90 per minute, from eleven to fourteen years of age 78 to 85 per minute. Exercise will increase the rate from 20 to 50 beats per minute (Holt).

The four most common congenital heart lesions are defects in the ventricular septum, defects in the auricular septum, pulmonic stenosis or atresia, and patent ductus arteriosus. The most common murmurs are therefore systolic ones while in the case of patent ductus arteriosus the murmur may occupy both systole and diastole and have a saw like quality. The least ominous form is pulmonic stenosis, which when of the ordinary degree produces no symptoms and has no special bearing on the longevity of the individual, and is only evidenced on auscultation to the physician. With the other lesions more difficulty is to be apprehended, and when accompanied by cyanosis, clubbing of the fingers and other signs of venous stasis, they are of direful portent, the patient dying in early adult life or before. The treatment resolves itself into general care of the patient and is conducted chiefly on the principles of rest and nutrition.

The special purpose of this paper is to draw attention to the infectious diseases of the heart in childhood. That we have underrated their frequency and importance is apparent when we consider the etiology of heart disease in general, for it is at this period when the infections are especially prominent, such as tonsillitis, scarlet fever, diphtheria, measles, etc., and seeds are often sown at this time which grow and blossom out into valvular insufficiency and myocardial degenerations in later years.

The diagnosis of these cases is not always easy, but a diagnosis will more often be made if attention is directed to this organ. When there is a persistent slight elevation of the child's temperature, with an increase in the normal pulse rate, the presence of systolic murmur usually at the mitral, occasionally of a diastolic murmur replacing the aortic sound, especially when there are signs of decompensation, shown by a swollen tender liver, and fine crackling rales at the bases of the lungs, the diagnosis can readily be made. When the picture is incomplete, one should always think of middle ear disease, nephritis, and tuberculosis, and exclude them before making the diagnosis of endocarditis exclusively, although they may occur as complications the one of the other. Murmurs may be significant or not according to accompanying conditions. They are always abnormal, but have no importance when they can be made to disappear by pressing firmly against the precordia with the stethoscope, or when they disappear on the change of the position of the patient. A murmur due to relative insufficiency of course will clear up as the heart muscle regains its tone under rest treatment. It is the belief of the writer that occasionally, a murmur due to changes consequent upon valvulitis may disappear with the growth of the heart where insufficiency without stenosis is present.

Mackenzie has called particular attention to the pathological physiology of the heart and with some modifications, the principles he has enumerated, hold good for children as for adults. Sinus arrhythmia is a psysiological phenomenon in childhood, but is much exaggerated with the onset of an infectious disease. See Case 1, tracing where we can trace the relationship of this irregularity to the influence of the respiration, the heart beating more quickly with inspiration and slowly with expiration, we can rest assured that the heart is in good condition, and not be alarmed, as the contraction of the heart is being conducted normally, and the stimuli of contraction are being propagated at the normal site, the sino-auricular node, but

are being sent out at improperly spaced intervals.

Premature beats are also present in children. As they mean the presence of ectopic foci in the musculature, they are usually not present under ten years of age, Lewis having only one case, and this one at four years of age. My youngest case was fourteen years of age. In this patient, every other beat was premature, causing on listening at the precordia the so-called coupling of the beats. This may come as a sign of too much digitalis medication, but in this case it was eight days from the last dose of digitalis to its appearance. A little later the pulse was that of pulsus alternans every other beat being less efficient than the preceding. Case 2, see tracing.

Auricular flutter in which the auricles contract as a whole but at a rate of 200 to 450 per minute, usually about 300 per minute, is also found in children, a case record by Hume occurring in a girl of seven years of age following diphtheria. In a case under observation in July and August, 1914, the patient, a boy of 14 years, had a ventricular rate on examination of 96 per minute with an auricular rate four times as great. The rhythm was perfectly regular. See Case 3.

Auricular fibrillation in which there is a fibrillary contraction of the auricle, which results in sending of innumerable stimuli of contraction into the ventricle in an irregular manner, causing a grossly irregular pulse, has been found in children as young as thirteen years of age. My youngest case was sixteen years of age, and is of the coarse fibrillation type. Her trouble dated from five years of age, when she had tonsillitis and rheumatism. Her tonsils were removed but she continued to have attacks of infectious arthritis, with at times cardiac decompensation as shown by edema, etc., her first heart attack occurring at six years of age. When first seen her pulse was absolutely irregular, rate 114 per minute and under the influence of digitalis at one period it became slow, 60 per minute and coarse fibrillation waves were seen in the jugular tracing. Case 4, see tracing.

Heart block is not infrequent in children, occurring even in infants, and manifests the same characteristics as in adults. Lewis gives as the youngest patient suffering from paroxysmal tachycardia, a child of eleven years, but a case has been reported by Hutchison and Parkinson in a child at two and three-quarter years. Before the age of ten years, sinus arrhythmia, heart block, premature systoles, paroxysmal tachycardia and auricular flutter may be observed, while after ten years of age, auricular fibrillation is to be added to the list.

The prognosis in any true case of endocarditis or myocarditis must always be a guarded one. After the febrile period, the prognosis will depend upon the way the heart responds to exercise. The loudness of the murmur while it alarms many physicians is an inconsequential feature. It takes a powerfully contracting ventricle to produce a large volume of sound, and therefore it is usually a hopeful sign. A loud murmur quickly changed to a weak one with signs of dilatation is a bad omen. The child's heart, being so often a target for the infections incident to childhood, stands a great chance for reinfection, and therefore when becoming diseased early in life, greatly shortens the individual's chance for a long life. The treatment of every case should be entered upon however, with a hopeful spirit, as in many cases judicious treatment will give astonishingly good results.

The general principles of treatment are the same as for adults. In the period of decompensation absolute rest, lying flat upon the back in bed unless orthopnea is present. A small dose of opium to relieve dyspnea; a saline to deplete the bowels, and a restriction of the fluid intake to limit the work of the heart. In cases where immediate action is necessary, a small dose of strophanthin hypodermatically may be used. The tincture of digitalis for continuous digitalis medication is the remedy of choice. During the period of infection, an ice bag is used over the heart with a flannel intervening. The salicylates in heavy doses combined with sodium bicarbonate, the latter being used in the proportion of two to one of the former. In severe cases in adults 20 grains every two hours of the sodium salicylate is used, the doses for children being scaled down to suit the age. This heavy dosage is used for three days, and is then usually halved for three days more, and thereafter one-fourth the initial dose is used. These measures usually suffice, but in selected cases, vaccines and sera may be used to advantage.

In conclusion, in examining children let us not overlook the heart but make a routine of examining it daily in all cases of infection. When we consider the disastrous consequences of possessing diseased tonsils in particular, the early enucleation of these is of paramount importance, as is good care in the preceding attacks of tonsilitis. It is to be hoped that with the more general adoption of the routine examination of school children, more of these cases may be picked up in their incipiency, and prophylactic measures be available, instead of, as now

so often happens, the condition not being recognized until these patients are beyond relief.

Addendum: In November, 1915, a patient, a school boy, 6 years of age, was under my care, presenting premature ventricular beats.

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CASE REPORTS.

Case No. 1. W. W., aet 11 years school boy, sick with scarlet fever. the rash appearing Feb. 6, 1915, the daily temperature ranging from 99 to 101.4° F. the pulse 86 to 114, until Feb. 11, when the temperature dropped to normal. the pulse rate becoming 72, and the pulse being markedly irregular with long pauses simulating heart block. It was easily noted that the character of the pulse varied with the respiration, that is, we had a marked respiratory arrhythmia. The right border was 2 centimeters from the mid sternal line, the left border 7½ centimeters from the m. s. l. the systolic blood pressure 140, diastolic 105. With the general treatment of the disease, the exaggerated respiratory arrhythmia disappeared.

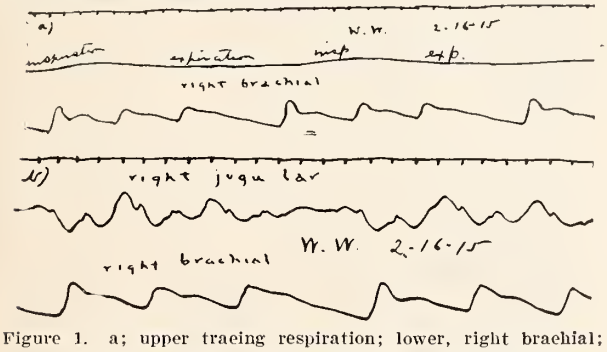


Figure 1. a; upper traeing respiration; lower, right brachial; note with inspiration, the rapid pulse rate, with exhalation the slow pulse rate. b; upper traeing right jugular, lower traeing right brachial.

Case No. 2. L. C. School boy 14 years old, entered St. Mary's Hospital, Dr. T. A. McGraw, Jr's. service, Feb. 24, 1914.

F. H. Father died of stomach disease three years ago, otherwise negative.

P. H. When one year of age had from two to four convulsions daily over period of one week. Measles at four years. Tonsillitis at eleven, lasting one week. Later tonsillectomy was done.

P. I. About two months ago, feet and legs swelled, this lasted about a week. Two days after it had subsided, he contracted pneumonia. This lasted about three weeks. His shortness of breath dates from this time. About four weeks ago, seized with severe cough.

P. E. Patient propped up in bed, breathing with difficulty and frequently seized with paroxysms of coughing. The cough is unproductive and of a metallic quality. Expiration is prolonged and slightly stridulous. Skin pasty and mucous membranes pale. Pupils react to light and accommodation. Throat congested. Tongue clean, no tremor.

Heart.—Diffuse apex beat in fifth space, 4 centimeters outside nipple line. Left border 11½ centimeters to left, right border 5 centimeters to the right of m. s. l. in fourth space. There is a loud blowing murmur, systolic in time, heard best at apex, and transmitted to the left. It is heard in the back, on the right as well as on the left. It occupies the whole of systole and replaces the first sound.

P^2 greater than A^2 and accentuated.

B. P. 124-68. Pulse regular from 100 to 120.

Lungs.—There is marked dulness at the base with feeble breath sounds and diminished voice sounds. Exaggerated breathing in upper portion of lungs.

Liver.—Percussed from fourth space to 4 centimeters below costal margin in nipple line. On percussion it is extremely tender.

Extremities.—Very slight edema.

Blood Reds.—5,120,000, Hb 90 per cent. Leucocytes 24, 000 Polys 68. Large lymphocytes 3, small 29.

Urine.—Sp gr. 1020 acid albumin positive, Granular casts, Hyaline casts, Epithelial casts. Red blood cells, and a few leucocytes.

Treatment.—Feb. 24, the patient was given infusion digitalis, one drachm every three hours. Beginning Feb. 26 sodium salicylate was given in ten grain doses three times a day. On March 4 the sodium salicylate was discontinued. On March 7 diuretin Gr. XV was ordered every four hours, the digitalis discontinued, and tinct. strophanthus m. X given every four hours. On March 9, the strophanthus was discontinued. March 13, the sodium salicylate was resumed as before. March 26, fluid extracts of apocynum cannabinum m V three times a day was ordered. The patient improved very slowly, and left the hospital April 3, against advice, as he was still markedly edematous, and was lost sight of.

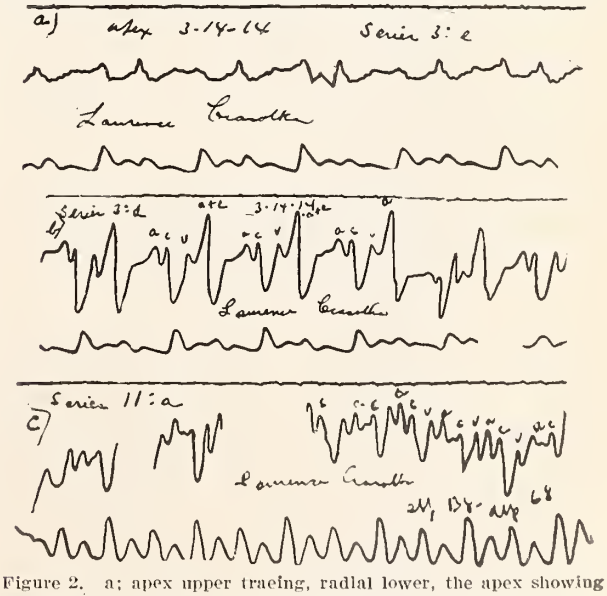


Figure 2. a; apex upper traeing, radial lower, the apex showing the coupling of the beats. b; showing upper traeing, jugular, lower radial. The jugular wave a + e is a large wave due to the ventricle, beating prematurely, being in contraction at the same time with the auricle. c; showing upper traeing jugular, lower radial. The radial shows the pulsus alternans, for although the beats are of the same length, every other one is small due to inefficient ventricular contraction.

March 14, 1914, every alternate beat was premature, and of the ventricular type. No digitalis medication had been given for eight days. March 20, 1914, pulsus alternans was present. (See Figure 2).

CASE No. 3. F. Z., aet 14 years, school boy, of Hebrew descent, was seen first June 29, 1914. His family history was good. When fifteen months old, he had measles followed by pneumonia. Two and one-half years ago, he had an attack of tonsillitis, and during the past winter he had pharyngitis. Three weeks ago, he noticed pain around the heart which lasted three days, and shortness of breath was noticed when going upstairs. On the day of his first visit, this precordial pain had recurred, and he had noticed he tired easily so that he was unable to practice his violin lesson. Physical examination of the heart showed the right border 3 centimeters from the mid-sternal line, the left border 10½ centimeters. The apex was not palpable nor visible. The first sound was weak, the pulmonic second accentuated, and greater than the aortic second. The lungs were clear, the cardio hepatic angle normal, the liver from the sixth rib to the costal margin. The temperature was 98.6° F, the pulse rate was 112, and the auricles were, from the pulse tracing, apparently in a condition of flutter. July 3, the same condition was present, the radial pulse rate was 96, the auricular rate being four times that of the ventricle. On July 6, the normal rhythm was present, and thereafter was present, but it was some months before the ordinary amount of exercise was tolerated. (See Figure 3).

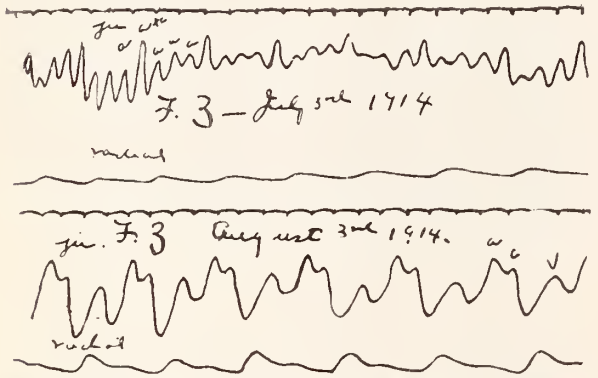


Figure 3. The upper tracing shows the auricle in a condition of flutter, the waves in the tracing (ju) being regular and 4 times as many as the radial. Time is one-fifth second. The lower tracing shows a normal jugular and radial.

CASE No. 4. Patient M. C. act 16 years, High School girl, seen first in consultation with Dr. F. B. Walker. May 19, 1915. The family history is good, but it is interesting to note that an uncle, and cousins have had infectious arthritis with heart complications.

As a child she had measles and tonsillitis. Her tonsils were removed at five years of age. A year later she had infectious arthritis and was sick in bed one month. The knee and ankle joints were affected at this time. A year from this time, a heart complication was present, and there was edema of the lower extremities, and free fluid in the abdomen. This cleared up and she had been fairly well until the present attack of endocarditis.

Physical Examination.—The temperature was 98.4, pulse 114 and grossly irregular, the respiration 58. The systolic blood pressure was 118, and there was no diastolic phase. The right border was 4 centimeters from the mid sternal line, the left border 18½ centimeters in the fifth space, the apex being located in the sixth space, 16½ centimeters from the mid sternal line. The upper border was at the third rib. There is a diastolic as well as a systolic murmur. There is a to-and-fro friction rub over the precordia heard best in the third and fourth left interspaces. A pistol shot is present in the femoral. The liver is felt one finger below the costal margin, and there are fine rales in the left base. There was no edema of the lower extremities. On May 24, arthritis was present in the left knee, the temperature being 101.2° F., pulse 120, respiration 44, systolic blood pressure 155, with no diastolic phase.

May 25, a twenty-four hour urinary specimen amounted to only ten ounces, and there was evident involvement of the kidneys. Under digitalis medication, the heart improved, and with the salicylates the infection was apparently coming under control until the fourth of June when the temperature rose to 102.8° F., the next day rising to 104 axilla, the pulse being 130, the respiration 50, and she became markedly cyanosed and expired about 5 p. m.

Under the influence of the digitalis, the radial pulse rate was on May 30, 60, but as shown by the apical tracing May 31 there was some coupling of the beats. On discontinuing the digitalis 105.5° F., pulse rate 135, and respiration 50. (See Figure 4, showing absolute irregularity of pulse, coarse fibrillation waves showing clearly May 31.)

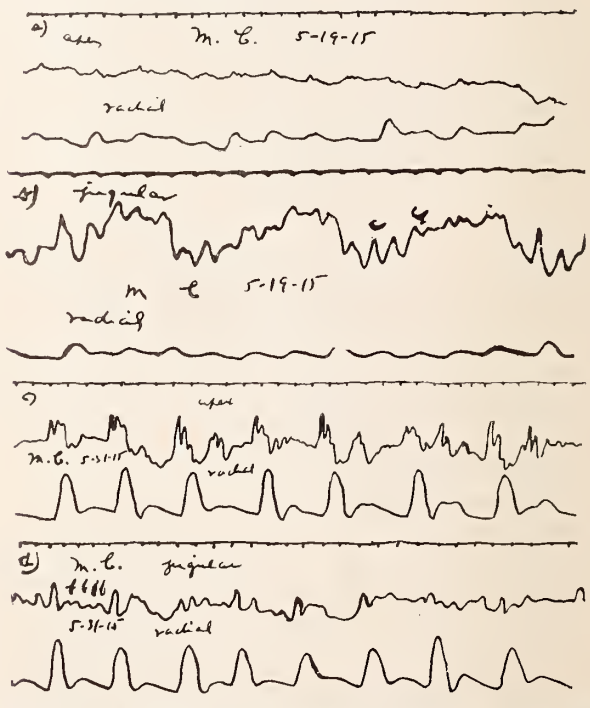


Figure 4. a; showing apex and radial; pulse rate 114, pulse absolutely irregular. May 19th, 1915. b; showing jugular and radial May 19th, 1915. c; showing apex (note coupled beats), and radial, pulse still irregular radial pulse 60. d; jugular and radial; notice coarse fibrillation waves f. f. f. f. in jugular. Time one-fifth second.

THE DARK FIELD ILLUMINATION METHOD IN THE DIAGNOSIS OF PRIMARY SYPHILIS.

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and
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In reviewing the literature regarding the use of the dark field illumination test in the diagnosis of primary syphilis we are surprised at the lack of attention paid to this method. As the cure of syphilis depends largely on its early recognition, followed by prompt treatment, we are at loss to account for this lack of interest.

The patient, as a rule, calls on the physician within a few days after the appearance of the sore, usually the first week and this is the time when the dark field method gives the highest percentage of positive results. After ten days the number of positives declines and the sore is often coated with pus from a staphylococcic or other secondary infection. For the first two weeks the dark field method gives positive results of from 90 to 100 per cent. During the same period the percentage of positive reactions for the Wassermann test is given by various authors as only 35 to 50 per cent., an advantage of about 50 per cent. for the dark field method.

The India ink method is probably next in value for early diagnosis but it is difficult to obtain suitable and uncontaminated inks and moreover the property of motion can not be observed. Stains are of much less value, a large per cent. of those advocated for use do not stain the spirochetes at all. However, these last two methods should be used, if, for any reason, it is impossible for the physician to avail himself of the better dark field method.

Dark field illumination methods were invented by English microscopists years ago; John Queckett states in his handbook of microscopy that Rev. J. B. Reade had used such a method as early as 1838. This method was seldom used until the ultramicroscope for the detection of very small bacteria and colloidal particles was

CHART I.

The Dark Field Illumination Method in The Diagnosis of Primary Syphilis.

NUMBER	DARK FIELD	WASSERMANN	REPEAT WASSERMANN	LESION	DURATION
1	†	0	† 2 months later, treated	Genital	3 days
2	†	0	0 3 months later vigorous treatment	Genital	7 days
3	†	0	0 1 years treatment	Genital	8 days
4	†	0	† 3 months later, treated	Genital	4 days
5	†	0	† 6 months later, treated	Genital	7 days
6	†	0	0 9 months treatment.	Genital	3 days
7	†	0	† 2 months later, treated	Genital	14 days
8	†	0	† 1 month later, untreated	Urethral	14 days
9	†	0	0 4 months later, treated	Genital	4 days
10	†	0	† 2 months later, treated	Genital	21 days
11	†	†	untreated.	Oral	40 days
12	†	0	† 2 months later, treated	Genital	7 days
13	†	0	0 4 months later, vigorous treatment	Genital	3 days
14	†	0	† 3 weeks, later, treated	Genital	5 days
15	†	0	not obtained.	Genital	10 days
16	†	0	† 2 weeks later, treated	Genital	45 days
17	†	0	† 6 weeks later, treated	Genital	4 days
18	†	0	0 4 weeks, also 8 mos. Treated vigorously.	Finger	10 days
19	†	0	0 3 and 8 months, vigorous treatment	Finger	9 days
20	†	0	† 1 and 6 months, vigorous treatment	Finger	9 days
21	0	†		Lingual	21 days
22	0	†		Labial	22 days
23	0	†		Genital	15 days
24	0	0	0 3 and 6 weeks later	Genital	3 days
25	0	0	0 2 and 6 weeks later	Genital	10 days

†=positive 0=negative.

brought into prominence. In 1905 Fülleborn used the dark field method to demonstrate the spirochetes of the chicken and since then it has come into general use for the detection of the spirochetes of syphilis. The method commonly used is described by microscopists as an "arrangement by which the preparation is illuminated by solid, and imaged by hollow beams." It is, briefly, the ordinary miscroscope equipped with a special condenser in which the direct rays are blocked out and a small funnel stop placed behind the lenses in the oil-immersion objective to reduce the numerical aperture. A powerful light is also necessary, usually a small clock-feed arc lamp being used.

If the patient has used antiseptics, he is instructed to wash the lesion thoroughly with boiled tap water and to keep a wet piece of gauze on same for twenty-four hours, after which time he is to present himself for examination. The patients must be impressed with the fact that nothing but water is to be used for they will often "clean the sore with peroxide" or use other substances that will render the tests negative. If the dark field is negative the patient is told to keep up the wet dressings and return for another test in about twenty-four hours. The material for examination is obtained by gently scraping the lesion and the exuded fluid placed on a clean thin slide and covered with a clean thin coverglass; it is then ready for examination. Other spirochetes are often present, especially in lesions of the mouth and throat, but the spirochetes of syphilis are so typical in morphology that anyone seeing them a few times could not mistake them for the other varieties. The beginner, of course, will make a few mistakes. Where there are several lesions each one must be examined before the test can be declared negative as the joint occurrence of chancres and chancroids is more frequent than generally supposed.

The cases presented in this paper are selected cases which we were able to follow and check up later with the Wassermann reaction. As a rule the cases positive by the dark field method did not appear for a repeat Wassermann test until they had had anti-syphilitic treatment.

The above table represents the average results obtained by the dark field method. Judging solely from the results of thousands of Wassermann reactions the therapeutic value of mercury or "mixed" pills is about equal to that of alfalfa and therefore some of the cases classed as treated by this method in the above table would be more properly classified under the untreated cases. Case No. 8, an intraurethral chancre, was sent to the laboratory as a gonorrheal case, having a slight discharge as his only symptom at that time but later developed a rash. Cases 18, 19 and 20 were physicians with infected fingers, all of whom received vigorous treatment with Salvarsan and mercury. Case No. 11 had several lesions for two months which were treated as chancroids. Dark field method was not used until mucous patches appeared. In this case the genital lesions were negative and the mucous patches positive. Case No. 21 was a lingual ulcer of three weeks' duration which gave a negative dark field, and a X X X positive Wassermann reaction. In Case No. 23 two dark field tests were negative and his Wassermann reaction strongly positive, due most likely to a previous syphilitic infection. This case was probably another case of undiagnosed intraurethral chancre as the patient had had gonorrhea and "hives" about one year before; patient was positive that he did not have throat or genital ulcers at that time but only a slight discharge. Case No. 15, a traveling man, had an examination made two days before in another city and was informed that the lesions were not syphilitic. He had four ulcers and stated that only the two largest had been examined. The lesion that proved to be syphilitic was a very small ulcer on the side of the frenum. This case emphasizes the necessity of examining all the lesions before declaring the same free from spirochetes.

This short article contains little of interest to the experienced laboratory worker and is written solely to remind the general practitioner of a valuable test, articles about which are appearing at greater intervals each year. Practically the only mention the dark field method receives in the medical press at present is the demonstration of the syphilitic spirochetes in the spinal fluid, emulsions of brain and other tissues where the positive results are rare. If, in suspicious cases, the patient lives at a distance from a reliable laboratory, it would be a wise investment of time and money for him to make the trip to the laboratory for an examination. Certainly all cases that are diagnosed before the Wassermann reaction becomes positive need less treatment to effect a cure than those that are made afterwards. Therefore, if this paper attracts the attention of only a few practitioners who will subsequently use this method for early diagnosis rather than waste valuable time (for the patient) by waiting for a positive blood test, it will have served its purpose well.

TRANSACTIONS

OF THE

Clinical Society of the University of Michigan

Stated Meeting, November 3, 1915

The President, UDO J. WILE, M.D., in the Chair
Reported by REUBEN PETERSON, M.D., Secretary

FIVE RECENT CASES OF PRIMARY CARCINOMA OF THE VULVA.

Frederic M. Loomis, M.D.

(From the Department of Obstetrics and Gynecology, University Hospital, Ann Arbor, Michigan).

The following five cases are reported because, in spite of the supposed rarity of the condition, all five have been patients in the Gynecological Clinic of the University Hospital within an interval of twenty days. They interest us also because they add one more bit of evidence, though none is needed, that early diagnosis of malignancy and radical operation may mean life, while the reverse surely means death.

Case 1. No. 6723, age 68, September 2, 1915. Transferred from Dermatologic Clinic with the diagnosis of squamous celled carcinoma of the vulva.

History.—The patient noticed the growth a year ago, which was then examined by her physician. Aside from the growth there was no pain nor were there symptoms of any kind.

Examination.—On left labium at introitus is a raised indurated mass, with hard base, about the size of a quarter. The inguinal glands are not enlarged. The piece removed for diagnosis showed squamous celled carcinoma.

Operation. — 9-28-11. Cauterized twenty minutes with low heat.

Final Examination.—10-19-15. Fairly well healed; fourchette eroded by irritating discharge which has been much relieved by permanganate douches. Patient says she feels much better.

Case 2. No. 6763, age 68, October 11, 1915.

History.—Trouble began two years ago. The sore on the vulva enlarged rapidly. Is now very tender, with stinging pains extending to the inguinal regions. Patient was treated by her physician for diabetes but the vulva was never examined.

Examination.—Right labium and fourchette are covered with a broken down, indurated mass, evidently malignant. Extent cannot be made out on account of tenderness. One large tender inguinal gland can be palpated. Patient emaciated, psychopathic, cachectic, and in an almost dying condition.

Treatment.—Referred to the X-ray Department where it was decided nothing could be accomplished. The patient was discharged October 20, 1915 without treatment.

Case 3. No. 6778, age 66, October 19, 1915.

History.—A small, hard nodule on right labium, rapidly enlarging and becoming tender, was first noticed a year ago. The patient tried vaseline, ointments and washes. Saw several physicians and was told by each it was cancer. Family physician removed the mass two months ago, but the growth returned at once, and is now excessively painful. Patient has lost from ten to fifteen pounds.

Examination.—The right labium minus shows a growth the size of a half dollar, which is hard, bleeds at touch, and is very tender. No inguinal glands can be palpated. The blood pressure is at least 280, the instrument not working above that point. Patient not considered a good operative risk.

Operation.—October 26, 1915 by Dr. Peterson. The entire right labium was removed with wide margins of apparently healthy tissue. On account of the patient's poor condition, the inguinal glands and opposite labium which were apparently unaffected, were not removed. Good apposition was secured with interrupted silkwormgut sutures Today, eight days after oper-

ation, the patient is entirely comfortable, and the wound is practically healed.

Case 4. No. 6654, age 39, May 5, 1915.

History.—Three months ago noticed a small lump on the vulva; the labium is hard, tender and reddened. Inguinal glands enlarged. The disease is too far advanced for radical operation. Referred to Dermatologic Clinic where cautery and X-ray were advised.

Operation.—June 4, 1915. Actual cautery and low heat.

Pathologic Report.—Medullary squamous celled carcinoma, far advanced.

Re-entered August 25, 1915. The patient has gained six pounds, and feels much better. The wound has never entirely healed but much relieved. For the past three weeks patient has been much worse.

August 27, re-cauterized, low heat.

September 25, X-ray treatment.

October 4, discharged. Well healed. The patient understands that she is not cured, but is much relieved temporarily.

Case 5. No. 6701, age 54, September 17, 1915.

History.—This history is important and interesting because the patient was first seen in February, 1903. At that time her history sounds like a bit of a description from Hippocrates. She first noticed, she said, about seventeen months ago, "two little pimples which looked like blisters and ran together; the skin came off with much smarting; it looked like raw meat and from it oozed a clear fluid. This increased slowly in size and the edge felt to be hard and raised; recently this has bled much and at night is the cause of uneasiness and great distress."

Examination.—Both labia involved, indurated, no healed areas.

Pathologic Report.—Squamous celled carcinoma of the vulva, with secondaries.

Operation.—March 6, 1903 by Dr. Peterson. Incisions were made along Poupart's ligaments, five inches in length, on both the right and left sides, several glands being removed from each side. The ulcerated surfaces on the labia were cleansed with hydrogen peroxide and touched with the actual cautery. An oval incision was made, starting just above the base of the clitoris, extending around the labia and reaching below to the upper part of the external sphincter. This incision was deepened, and the entire external genitalia were removed. The parts were brought together with interrupted silkwormgut sutures. In the lower portion the usual perineorraphy was performed. The patient was discharged in good condition.

1909. Small growth again removed after six years of comfort.

1914. No trace till recently. On right labium is recurrence which is ulcerated, indurated, infiltrating and tender. This was removed with as wide margins as possible of healthy tissue. Pathologic examination was the same as before.

1915. Fairly comfortable, but for the past four months has had a tender, ulcerated area on the right side of introitus the size of an olive. This was thoroughly cauterized under low heat September 17, 1915, and the patient discharged, improved on September 30.

Unfortunately early diagnosis of malignancy of the vulva is difficult, at least it is difficult for the physician in general practice. There are a good many things to think of and we must always remember that the easier the diagnosis the worse the prognosis. In the differential diagnosis, we must consider, first, the simple ulcer, which is red, hard, painful, bleeding easily, but usually with a short history and with one distinction, a very ready response to very simple treatment, i. e. to the removal of the discharge and the application of astringents or healing ointments. This results in prompt recovery. If the doctor does not get prompt recovery, he must always assume that he is dealing with something other than a simple ulcer.

Chancroid, with which epithelioma of the vulva may sometimes be confused, has rapid growth, undermined edges, punched out base, and is soft, not hard; there is frequent infection of the adjacent surfaces, early painful enlargement of the inguinal glands, and a history of suspicious coitus in most cases.

The primary lesion of syphilis is hard like cancer and painless like very early cancer, but is usually of a short history, rapidly disappearing, often accompanied by the other evidence of syphilis, by a positive Wassermann and by the other signs with which you are familiar. The tertiary lesion of syphilis is sometimes confusing, but usually not.

Tuberculosis of the vulva may at first be very confusing, being a small indurated patch, slowly growing, but finally breaking down and ulcerating and then healing in places. Tuberculosis produces a rather slow broad ulceration with crooked edges and it may infiltrate away back and penetrate into the bladder. Tuberculosis of the vulva is usually secondary to involvement elsewhere, particularly in the upper genital tract, the infection occurring through

the constant irritating discharge which of course contains the Koch organism. The diagnosis may be definitely made by a pathologic examination of a bit of excised tissue.

Among other confusing conditions I may mention malignancy secondary to squamous celled carcinoma of the cervix, which is sometimes found, though not present in any of the five cases here reported; and chorio-epithelioma, or malignant syncytioma, which is always secondary to a malignant change following pregnancy.

Primary carcinoma of the vulva usually appears first as an annoying "pimple," which is hard, red and spreading. It does not yield in the least to local treatment, does not heal and gradually or rapidly shows the thickened, heavy characteristic border, with a surrounding zone of induration. The surface breaks down and becomes secondarily infected, bleeding at the slightest touch. The outlook at this time is never good for absolute cure, but as seen in one of the cases mentioned, many years of comfort may sometimes be secured by early recognition and radical operation.

DISCUSSION.

Dr. Udo J. Wile: We are particularly interested in carcinoma, or as it might be called, epithelioma of the vulva, on account of the very serious prognosis which Dr. Loomis has mentioned, and also because it illustrates admirably the rule that I think can be laid down, that where an epithelioma is of the squamous celled type, that is to say, wherever a growth invades or is contiguous to mucous membranes, the prognosis is uniformly bad. I had the privilege of seeing two of the cases Dr. Loomis reported. They were cases easy of diagnosis because of the extent of the lesions and the characteristics which he mentioned. Of particular importance in establishing a diagnosis of carcinoma over other conditions is the border, the pearly border which is almost invariably present in these cases, an inverted, hard, indurated border with a peculiar white translucency which no other lesion has.

There is just one point at which I think I might take issue with Dr. Loomis and that, of course, is not a decided point. He said that if these cases could come earlier they might be saved. My feeling is that a squamous celled carcinoma when it can be diagnosed and no matter how early, carries invariably a bad prognosis. Whether this means immediate or early death or not, the prognosis as far as recurrence is concerned is in no way comparable to the basal celled carcinoma or the carcinoma as it occurs early in the glandular structures. The tongue illustrates this point admirably. One sees mutilating operations performed every day and I have yet to see a single case of carcinoma of the tongue which remained cured for any length of time provided that the neoplasm was of the squamous celled variety.

Dr. Howard H. Cummings: Carcinoma of the vulva is an interesting condition because of the small number of cases seen. I think the largest series of cases is reported by an Italian named Catannio. He reports twenty cases and calls attention to the fact that a large per cent. of cases of the disease originate in the lower part of the labium majus. In his series, sixteen occurred here. He believes that irritating discharges play an important part in producing the disease. He also calls attention to the fact that preceding carcinoma of the vulva there is severe pruritis and that trauma by scratching may be another etiologic factor.

Dr. Loomis: I spoke of using a cautery on some of these cases. Some of you are familiar with the Percy method of treatment of inoperable carcinoma of the cervix. The essence of this treatment is the supposed fact that carcinoma cells are more susceptible to heat than other cells. Our inoperable cases treated in this way are fairly satisfactory, more so than by treatment in any other way. We have a sidelight on that treatment just furnished us by a specimen which we have sent to the pathologic laboratory the past few days. This woman received a preliminary cautery treatment and then the radical operation. The surface of the cervix which has been cauterized shows the heat penetrating away in. The carcinomatous cells, however, are relatively very little affected. All through the cervix are nests of live squamous cells which have apparently withstood the heat better than ordinary tissue. Whether this is a comparatively constant finding we do not know. If so, we shall be very much discouraged. In the light of many comparatively good results from this treatment, as a palliative measure, we believe this finding must be the exception rather than the rule.

PARALYSIS OF THE SERRATUS MAGNUS MUSCLE FOLLOWING REMOVAL OF THE GLANDS OF THE NECK.

Carl D. Camp, M.D.
(From the Neurologic Clinic, University Hospital, Ann Arbor, Michigan).

The case that I call to your attention is one of isolated paralysis of the serratus magnus muscle due to an injury of the long thoracic nerve, sometimes known as the external respiratory nerve of Bell, occurring after the operation for removal of tuberculous glands of the neck. The patient was thirty-three years old, a cabinet maker, who came to the Hospital, May 26, 1912, complaining of a difficulty in raising his right arm.

There was nothing of importance in the family history nor in the previous medical history. No typhoid fever, rheumatism or diphtheria and no history of accident. A year before his admission to the Hospital he had an operation for the removal of the glands in the right side of the neck which was done by a surgeon in Chicago. In May, 1911, he had a second operation and another one in June. The operations had been for the removal of glands in the neck and both axillae. The first opera-

tion, however, had been for removal of glands in the right side of the neck and it was after this first operation that he noticed he could not fully raise the right arm. The right arm remained in that condition from that time. There was no pain in the arms or neck and he complained of nothing except the difficulty in lifting the arms. The surgeon told him that the removed glands were tuberculous.

The examination of the patient showed a well nourished individual who was mentally normal. He showed a linear scar extending from the lobe of the right ear down the side of the neck to below the middle of the clavicle and others in the right and left axillary lines. The scars were all healed, apparently by first intention. The grip of both hands was good and about normal. The movements of the forearms were strong. There was no atrophy or deformity of the upper arms or forearms and the deltoid muscles were normal. No atrophy or paralysis of the trapezii muscles. The photograph shows the winging of the right scapula and how the latter rides up when he attempts to raise his arm forward. There was a slight atrophy of the right latissimus dorsi but no atrophy of the supra- or infra-spinati muscles. No affection of the shoulder joint could be made out. The pupils were equal. The tendon reflexes in both upper and lower extremities were normal and the scapulo-humeral reflex was present on both sides. There was an area of anesthesia to light touch both anteriorly and posteriorly to the scar on the left side of the neck, probably due merely to the cutting of superficial nerves in these parts; there was no sensory change elsewhere. The chest expansion was normal and about equal on the two sides.

I record this case because a number of observers have spoken of the great rarity of isolated paralysis of the serratus magnus muscle. It is paralyzed in association with other muscles; in multiple neuritis; as the result of trauma; in soldiers from carrying guns upon the shoulder; or from fall on the shoulder; or from an injury to the shoulder by hyperextension. It is often found, for instance, in those who make a practice of going up ropes hand over hand, or climbing a ladder hand over hand.

The long thoracic nerve is made up of branches from the fifth, sixth and seventh cervical nerves. The branches or roots unite in the body of the scalenus medius muscle, then come to the surface and run down posterior to the brachial plexus and the large brachial vessels. It is posterior to these vessels when it comes through the axilla. Consequently it is practically impossible for stab wounds to divide the long thoracic without injuring some of the other nerves which overlie it. In this case there seems to have been no paralysis of any other muscle except the serratus magnus and the case, therefore, is almost unique in that respect. It is true there might have been some paralysis of the other muscles in the early stages. We did not see him until a year after the onset but the patient told us that his condition was unchanged.

It is an interesting point that, so far as I know, no case of paralysis in the distribution of the long thoracic nerve has been reported following surgical operation for the removal of cervical glands. The case is also of interest from the standpoint of showing the physiology of the serratus magnus. This man was unable to raise his arm above a right angle unless one fixed in some way, by holding the scapula, the scapula to the back. With the scapula so fixed he could raise his arm upward.

The case is reported as a typical illustration of isolated serratus magnus palsy which is rare, with an unusual etiology.

DISCUSSION.

DR. THEOPHIL KLINGMANN: The case is surely an interesting one and as Dr. Camp has said, unique. I do not know of an analogous case. It is very seldom we get such an isolated paralysis as this was so it is also instructive from a physiologic standpoint.

DR. WALTER A. HOYT: While listening to Dr. Camp's case report. I wondered if there had been any case reported in breast amputations of injury to this nerve. The nerve is so often seen when the complete operation for the breast is done. It seems plausible that it might be injured easily in such operations.

DR. CAMP: In reply to Dr. Hoyt, I would say that I do not know of any such case. It would seem to me, however, that one would hardly expect to get a typical serratus palsy from breast amputations, because if the nerve were cut in such cases it would probably be cut fairly low down and there might well be enough left of the serratus to hold the scapula in position and spoil the main diagnostic features, I have never heard of an isolated serratus magnus palsy from breast amputation.

MULTIPLE SYPHILITIC ULCERS OF THE LOWER LEGS AND FEET.

FRANCIS E. SENEAR, M.D.

(From the Department of Dermatology and Syphilology, University Hospital, Ann Arbor, Michigan).

The following case is presented not so much because the condition is a rare one, but rather because of the difficulties which it offers for diagnosis. As you see the case is one presenting multiple ulcers of the lower legs and feet. In

such a case there are always a certain number of diseases which must be considered in the differential diagnosis. Among these should be mentioned the so-called simple or varicose ulcer, the ulceration of tertiary syphilis, the traumatic ulcer, the ulcer which occurs in tuberculosis, and lastly the malignant ulcer or epithelioma.

The trauamatic ulcer we can readily dispose of in this case because it would be difficult to conceive of trauma which would cause so widespread an ulceration and affect the localities shown here.

Epithelioma not uncommonly occurs in the lower limbs, but is rather rare in comparison with its occurrence elsewhere. We would expect to find, however, in malignant degeneration of the epitheliomatous type in the lower limbs, the same characteristics that the ulceration would present were it on the face, hands or more common locations. An ulcer which is usually single, has a raised border, presenting the typical pearly margin, a base which is rather irregular and which bleeds easily. In this case the ulcer presents rather a clean base, the margin is not rolled and gives no suggestion of the typical pearly property. The ulceration is also too multiple for such a condition.

With regard to tuberculous ulcers, such an ulceration exists on the limbs practically only in connection with deep seated tuberculosis of the bone. In such a case we find an ulcer which does not present the appearance of these lesions, and is associated with sinus formation; there is usually a considerable amount of discharge, easily expressed, and of a thin yellow purulent nature. The border of the ulcer is irregular and undermined, the ulceration is apt to be very painful and the configuration is apt to prove linear. Also this type of ulceration occurs almost entirely in children.

I may say, going back to the epitheliomatous ulcers, that these lesions are painful only when they are deep.

The varicose ulcer is a very common type. The patient usually shows marked varicosities of the superficial or deep vessels and we are frequently able to show thrombosis. It is usually single, although it may be multiple. The ulceration is also apt to assume an oval form. It is most commonly seen on the inferior surfaee of the lower limb in its lower third, usually just above the internal malleolus. Sueh an ulcer usually shows ehanges in the surrounding skin. Pigmentation is almost invariably present. There is apt to be hypertrophy or sclerosis of an atrophic type of the surrounding skin. We may find considerable edema, which may be either hard or soft. Occasionally there is a lymphangitis of a low grade or chronic type extending up the limb. Such an ulcer usually presents a reddish base which bleeds more or less easily. It is frequently clean but it may be covered with a grayish dirty membrane, or there is a dirty discharge if it has not been kept clean. Of course, if secondary infection be present there may be a purulent discharge. These ulcers occur in people of middle age or past, as does the epithelioma and the gummatous ulcer, and they are usually painless as well. Occasionally we find a varicose ulcer which is painful but the great majority are painless.

This leaves us with the only remaining member of the group, the ulcer of tertiary syphilis. The nodular gumma of syphilis tends to be single and unilateral. The gummatous ulcer is more commonly single and unilateral, but also occurs frequently as a multiple and a bilateral ulceration.

We are all familiar with the characteristics of the ulceration of late syphilis. The ulcers tend to begin with the appearance of a nodule or small tumor which ulcerates later. The ulcer is sharply punched out or it shelves down sharply. The base of the ulcer is usually clean. There is but little if any discharge. The lesions are usually painless and there is a marked tendency, as we see illustrated here, to the formation of crescentic, annular or arciform lesions. This is due to the fact that there are usually present a number of small tumors which take an arciform or crescentic configuration, and as these break down they leave a number of small ulcers showing this configuration. Of course, other signs of syphilitic infection may be present, such as leucoplakia, glandular enlargement, etc.

In this particular case we can rule out readily the tuberculous ulcer from the age of the patient, and the fact that the ulceration is multiple. There is no association with sinus formation. The ulceration is painless and there is no discharge. All these factors enable us to eliminate that possibility readily. The epithelioma we have practically eliminated previously in noting the lack of characteristic margin, the multiplicity of the lesion, etc. The site of these lesions is not characteristic for the varicose ulcers. Many of the ulcers are present on the feet and the largest ulcer is on the outer aspect of the leg rather than on the inner. There are, however, lesions on the inner aspect. There are no marked varicosites. The vessels appear sharply dilated in one location but there is not sufficient varicosity to lead to this extensive

ulceration. The lesions are painless, a finding which would well fit in with that diagnosis. The margins are sharply punched out, however, and there is no tendency to a shelving margin and the base is very clean. So we have in this case a typical late syphilitic ulcerative lesion which, however, is interesting because of the multiplicity of the lesion and the fact that it is bilateral. We rather expect in a syphilitic ulceration of the late type a rather limited pathology. Here, however, we have a large number of lesions affecting both extremities. While this case is one which presents a considerable number of possibilities in diagnosis, the characteristic arciform configuration shown in these lesions, together with the other general characteristics of the ulcerations I have mentioned, leave the diagnosis perfectly clear.

This man has been forced to give up his occupation for the time being on account of the ulceration, inasmuch as they are somewhat tender, but not painful, when the patient is constantly on his feet.

Nevertheless, in spite of this fact the patient should consider himself rather a fortunate individual. In taking his history, we find that he gave no history of having had syphilis, no history to allow him to even suspect that he had this infection. When questioned rigidly as to the possibility he admitted that some fourteen years ago he had had a lesion on the penis which was apparently very trivial and yielded to treatment, local applications of powder causing its disappearance in a few days. He noted no manifestations which could be thought to be part of a secondary eruption or of the secondary phenomena, so he comes to us at this time with a condition which has caused him a great deal of trouble and which because of the absence of history has remained undiagnosed. The fortunate thing is that his late manifestations have selected this location for appearance rather than involving the brain or spinal cord or others of the more vital systems. Tabes dorsalis, paresis or some other manifestation could well have resulted instead of this particular type.

As to treatment, the condition is one which will clear up readily. Almost any sort of antisyphilitic treatment will cause a rapid disappearance of these ulcers. One thing to be kept in mind is that if this ulcer should be the result of a combination of varicose veins and syphilis, the condition would clear up under treatment but after a certain point it would not progress without treatment of the varicose veins. The patient is being treated with intravenous injections of salvarsan and he will be given a vigorous course of mercury upon returning home. Of course, the presence of these ulcers on the limbs would lead us to believe that the patient is free from any manifestations in the central nervous system. It is a general rule that when the tertiary lesions of syphilis manifest themselves in the skin, they do not involve any other system. Likewise patients having tertiary syphilis of the nervous system do not often show tertiary lesions in other systems of the body. In this case lumbar puncture has been performed and the findings bear out this presumption. The spinal fluid showed no increase in cells, and the Wassermann reaction was negative.

DISCUSSION.

DR. WALTER A. HOYT: The subject of ulcer of the leg is an important one, especially as far as the differential diagnosis goes. Many cases of this nature come into the Surgical Department, and upon all a diagnosis of varicose ulcer had previously been made. They have been treated by the usual method of local applications, and many have been operated upon. It has been our policy in these cases not to operate until the lesion is completely healed. We have made a practice for some time of referring these cases to the Dermatological Clinic, and have found that several of them have proven to be other than simple varicose ulcers.

DR. HARRY B. SCHMIDT: Are those lesions very infective? I imagine they have been handled a great deal by the home doctor.

DR. CARL D. CAMP: I think there are several points about the case that deserve emphasis. One point is the fact that the patient gave no history of his infection until it was very earnestly inquired into. Possibly had it been a medico-legal case he would have denied all evidence of infection. It is a very important point to remember that the patient may have been infected and may not know it and show no signs, and then come down with severe symptoms such as we have seen in this case, or with disease of the central nervous system.

Another fact to which Dr. Senear alluded is that when you have the tertiary lesions on the skin or mucous membranes or in the bones or other parts of the body, the nervous system frequently escapes and vice versa. I am constantly meeting with cases in which the nervous system shows marked evidence of syphilitic infection and there is positively no evidence of syphilis anywhere else in the body. That I think is an extremely important practical point.

DR. UDO J. WILE: I think the explanation of this selective action of the spirocheta may be due to certain specific strains which have selective predilections for certain systems. Most interesting work in this connection has been done by Noguchi who has described at least in culture three different types of spirocheta, one type in particular which he differentiates morphologically as a thicker and shorter organism than is usually found in ordinary chancres and different lesions. Soon after describing this shorter type, Nichols in the army was able to in-

oculate a rabbit with the spinal fluid of a patient suffering with early basilar meningitis and spinal fluid of a patient suffering with early basilar meningitis and he recovered from these rabbits syphilis in pure culture, a spirochete, which resembled very closely the short thick form described by Noguchi. Some other work which has been done recently tends to confirm the view that there is a distinct neurotropic organism which has a selective affinity for the nervous system. If this is so we can also assume that there is a strain which attacks mucous membranes and another which attacks bones, etc. It certainly seems that in certain individuals the infection seems to pursue certain lines of predilection.

Dr. Senear: In reply to Dr. Schmidt's question as to the possibility of the home physician becoming infected from this ulceration, in these late cases there is very little possibility of another person becoming infected because at this late stage the spirochetes are not free in the circulatory system, and also the spirochete of syphilis is not a hardy organism and in the presence of secondary infection is destroyed. In the present case the ulcers are clean because they are taken care of daily. When the patient entered there was a small amount of thin discharge and some slight secondary infection. In case spirocheta were present they would be in small numbers and would have been killed in this way. This is rather well illustrated in cases of primary syphilis in making dark field smears for diagnostic purposes. If the lesion is a clean one spirocheta are present in great numbers. However, if the case is one complicated by chancroid or secondary infections, they are rather rare.

Dr. Wile: Theoretically every gumma is infective and this patient can transmit syphilis to anybody through coitus. The danger from contracting syphilis from these open lesions, however, is very slight. In my experience I know of no cases which have been infected from contact with gummatous lesions in the manner suggested for the very obvious reasons which Dr. Senear mentions. If you section such an ulcer you have to get down deep beyond the necrotic tissue, beyond the gummatous tissue into the syphilitic tissue at the base before you can find any spirochetes at all, and then they are very few. If you excise a small portion of such tissue, however, and introduce it into a rabbit you can induce experimental syphilis. From the standpoint of the physician they are relatively benign, but one should always respect them, and handle them very carefully, or better handle them not at all.

SIR JONATHAN HUTCHINSON. AN APPRECIATION.

Mr. Lyle B. Kingery.

I fully appreciate how well a much longer discussion might be devoted to the life of Sir Jonathan H. Hutchinson, and the contributions for which the profession is indebted to him, but this has not been possible in this case, and if important facts are omitted in some instances, or if details are lacking in others, they have been sacrificed for brevity.

Jonathan H. Hutchinson was born at Selby in York, on July 23, 1828. He received his early education in his native town, at a day school. From childhood he showed remarkable studious habits. At sixteen he apprenticed, as was the custom in those days, to Mr. Caleb Williams, the lecturer on materia medica at the York School of Medicine, and the leading surgeon of that city. In 1847 he entered as a student at St. Bartholomew's Hospital, where his ability and industry attracted the attention of one of the great surgeons of that day, Sr. James Paget. With the intention of becoming a medical missionary, Hutchinson worked for several years in various special directions, holding no appointments, but carrying out that system of postgraduate education in his own person, which in later years he advocated so emphatically as necessary to the making of the competent practitioner. With this in mind he studied at several special hospitals, notably the Royal London Ophthalmic Hospital and the Blackfriar's Hospital for the Diseases of the Skin. In 1854, at the age of 26, he received his first hospital appointment of surgeon to the Metropolitan Free Hospital of London. While making his reputation as a surgeon he worked at medical journalism. He visited various hospitals and wrote weekly reports in the *Medical Times* and *Gazette*, the most important rival of the *Lancet* at that time. Soon he was appointed surgeon to the Royal London Ophthalmic Hospital and the Blackfriar's Hospital for the Diseases of the Skin. In 1859 he was appointed assistant surgeon to the London Hospital and was lecturer in the London Medical College on the Principles and Practice of Surgery. We obtain an indication of the highness of his ideals from a short abstract of his second opening address to the medical students of the above college. It is as follows: "The amount of human energy wasted, or worse than wasted, at the present time through want of knowledge is incalculable. A wise and far-sighted man may often be impelled by the resolute pursuit of knowledge to undertakings, at first sight very remote from its walks. A surgeon will be sent to the dissecting room, he will devote his days and nights to the laboratory and to the study, he will come to treat his fellow men, for the time being as though they were so many machines, he will appear to be absorbed in dry, hard matter-of-fact science, when possibly he is urged into those pursuits by a depth of feeling, of which, those who criticise him know nothing. It is curious and very instructive to note, that as a rule, they accomplish most, who begin at the greatest dis-

tance from their object." In these phrases the newly appointed assistant surgeon to the London Hospital revealed himself. Special work can never be too special from his point of view, it was not the acquisition of facts that was wanted but the interpretation of those facts in the light of all other knowledge.

At the age of thirty-five, in 1863 he began lecturing on medical ophthalmology. He also became associated with the Royal Locke Hospital in 1862. In 1865 he gained the Ashley Cooper clinical prize of Guy's Hospital for an essay on Injuries to the Head. In 1873 he became senior surgeon at the London Hospital Medical College. At the Royal College of Surgeons he was Hunterian Professor of Surgery and Pathology from 1879 to 1883, in the former year being elected to the council, and in 1880 appointed to the court of examiners. He served on the royal commission appointed in 1881 to inquire into the condition of the London hospitals for smallpox and fever cases, and the means of preventing spread of the infection, and later served on the Royal Commission on vaccination. In 1882 he was elected Fellow to the Royal Society and in 1908, at the age of eighty he received the honor of knighthood, for his distinguished services to medicine, an honor which he is said to have declined on a former occasion. His declining this honor on a former occasion is illustrative of his simplicity and modesty of nature for which he was universally admired. He received honorary degrees from the Universities of Glasgow, Cambridge, Edinburgh, Oxford, Dublin and Leeds. He was a corresponding member of the Surgical Society of Paris and an honorary member of many European and American societies, having the distinction of being the first honorary member of the American Dermatological Association.

Hutchinson was a most voluminous writer, among the foremost of his productions being, the Archives of Surgery, A Manual on Syphilis, A Clinical Memoir on Certain Diseases of the Eye and Ear, Consequent on Inherited Syphilis, The Pedigree of Disease, and in 1906 Leprosy and Fish Eating, not including his many contributions to various periodicals. His assembled monographs alone make up several volumes.

Thus Hutchinson gained the well earned title of the Universal Specialist. It is impossible in this account to describe or even enumerate the many original contributions made by him to surgery, ophthalmology, neurology, dermatology and syphilology, yet it may prove of interest to recall briefly some of his contributions in the latter branch of science. As a dermatologist and especially as a syphilographer, he stands well among the foremost, and leaves as milestones in our knowledge of this disease, such terms as, "Hutchinson's Mask," the masklike expression in tabes dorsalis, "Hutchinson's pupils" referring to the unequal size of the pupils in meningeal hemorrhage, 'Hutchinsonian teeth" occurring in hereditary syphilis, the latter with the usual accompanying interstitial keratitis and labyrinthine disease, being known as "Hutchinson's Triad." It is interesting at this point to read his original report, made on May 18, 1858, to the London Pathological Society on "The Effects of Infantile Syphilis in Marring the Development of the Teeth." It is as follows: "For a considerable time past I have been in the habit of recognizing in a certain very peculiar development of the permanent teeth, an indication that their possessor had in infancy suffered from hereditary syphilis. A remark to this effect which I made at a meeting of this Society some time ago being received with expressions of incredulity, it occurred to me that it might be well to make public such evidence as I possessed on the subject. My friend Mr. Coleman, our dentist at the Metropolitan Free Hospital, readily agreed to take casts of the patients I might send to him. Most of the cases taken were those of patients attending the Royal Ophthalmic Hospital on account of chronic interstitial keratitis, which, I believe almost always is a result of hereditary syphilis. The ages varied from 28 years to 5. In all a clear history of syphilis was established. The number of casts was thirteen in all and in all cases a portrait of the patient was secured. I may here remark that cases, in which young adults display indubitable marks of having suffered from infantile syphilis, and in which also a clear history is obtainable, are very frequent in the practice of general surgery. Had it not been for the field offered by the Ophthalmic Hospital in connection with the form of keratitis above averted to, I should not have been able to collect in the allotted time, a tenth of the cases. With these remarks as to the nature of the evidence, I will now pass to the conclusions arrived at.

No. 1. That there is a peculiar condition of the teeth which results from the influence of hereditary syphilis, and that the most frequent features of this condition are the following:

A. Smallness, the form being peggy with wide interspaces.

B. Notching, either one broad shallow notch

or two or three smaller ones giving a serrated appearance. This notching is often worn away.

C. Color. The teeth have a greyish discolored surface, destitute of polish in spite of any amount of cleansing.

D. Wearing down. This softness from deficiency of enamel renders them liable to premature wearing down. A syphilitic's teeth may be worn down at the age of 20, especially the front teeth.

E. The signs mentioned, apply almost exclusively to the incisors and canines. These conditions are totally distinct from those produced by the ravage of caries.

The above remarks apply only to the permanent set. The milk teeth of syphilitic infants, are liable to exfoliate before being cut and after having been cut are often of small size, bad color, and liable to decay; the notching and peglike form being rarely noticed. I have no doubt that the explanation of the fact that they suffer less uniformly than the permanent set, and in a different way, is to be found in the fact, that at the time of the original stomatitis, they were already well formed, while the others existed only as soft pulps. It is, I believe, to the occurrence of syphilitic stomatitis during the first few weeks of life and its complications with alveolar periostitis, that the marring of the teeth is to be attributed. A patient may be syphilitic, but if in infancy, he escapes stomatitis, his teeth will not be damaged.

There remain two or three questions to which it may be well to attempt as explicit answers as the subject permits of, before closing these observations:

1. May not the condition of the teeth described, result from other influences besides syphilis?

As to this I have no doubt that any stomatitis in infancy involving the periostium and investing membrane of the teeth, could produce the same imperfections of development. As far, however, as my observations have gone, I believe it is rare for any other form of stomatitis to produce such a regular type of deviation from what is normal in size, shape and color.

2. In cases of syphilitic patients in which this peculiar type of malformed teeth is observed, may it not be more reasonably attributed to the influence of mercury given to counteract the disease, than to the disease itself?

As regards this, I am disposed to conclude from many cases observed, that mercury instead of causing, tends to diminish, dental malformation.

Third and lastly, do subjects of inherited syphilis always present dwarf teeth?

Undoubtedly not. I believe it is essential to this condition that the patients shall not merely have inherited a taint, but that they shall have suffered severely in infancy from consequent inflammation.

In conclusion I may remark that the state of the teeth is often of great use in enabling us to decide whether certain other symptoms presented by the adult patients, are the results of inherited or acquired syphilis. In two or three cases in which patients between the ages of twenty and thirty came under my care, presenting the sunken nose, the fissured lips and earthy complexion of syphilis I was enabled by a glance at the teeth to determine at once that they were in all probability, due to congenital and not to acquired syphilis."

Such were the first observations on Hutchinsonion teeth.

Hutchinson's investigations in inherited syphilis were not confined to the dental changes alone, as he gave at an early date very exact reports of changes in the eye known as interstitial keratitis. He also interested himself in the peculiar form of deafness found in inherited syphilis and thus became known for the triad which bears his name.

From an early period he interested himself in leprosy, and in 1863 asserted that its cause was "Some ingredient or parasite generated by, or introduced into fish," which had not been cured or badly cured. A study of the geographical distribution convinced him that neither climate nor race had anything to do with the disease. The fact that it prevailed almost exclusively on islands, the shores of continents and along the course of rivers, led to the conviction that it must in some way, be connected with the eating of fish. From this hypothesis two corollaries followed: 1st. That leprosy is not contagious, and 2nd. that segregation is of little use. The discovery of the bacillus by Hansen in 1871 caused a revival of the contagionistic doctrine. In 1901 Hutchinson went to South Africa, and in 1902 to India to investigate statements made by certain observers, that leprosy existed in those who never tasted fish. He found these statements incorrect and from an enormous amount of evidence, which he collected with his characteristic acumen and skill, he set forth the following important facts in favor of his hypotheses:

1st. Leprosy is more prevalent in Roman catholics who eat fish regularly.

2nd. The number of lepers in all India is about five to every 10,000 inhabitants, while on the fishing islands along the Indian shore it is 150 to every 10,000.

3rd. Finally, the disappearance of leprosy with the advance of civilization favors his fish hypothesis, being attributable to the dietetic habits of the people as modified by advancing civilization.

In spite of the professional activities with which his days were crowded, he still found time for other interests and was a man of broadest general culture.. Like John Hunter, he took note of the whole animal world. Near his country place at Haslemere he established an educational museum containing objects illustrating a great variety of subjects, as rocks, fossils, stuffed animals, skeletons, plants etc; he was something of an expert in all. He also included in his museum a rare accumulation of original drawings, colored plates and photographs, illustrating clinical work in medicine and surgery. Through the instrumentality of Sir William Osler, this collection has been presented to the Johns Hopkins Medical School. On education and social topics he had thought much and he had a plan for state bounties on children, intended to promote their increase as the chief wealth of the nation.

It was here at Haslemere, that he died June 23, 1913, at the age of 85. In his death must be recognized the passing of a most versatile genius, distinguished as an eminent surgeon, an active practitioner, a leading skin specialist, a great authority on syphilis, a noted medical journalist, and a prolific contributor to the scientific and literary periodicals of his time. For all of these, reward came to him surely and steadily in the form of honorary degrees, but to quote a biographer "he had a richer reward than these, for by his persistent labor and the faithful exercise of his gifts he made himself of that rare species of masterworker whose reward is that he has served the whole human family. The few men of whom this may be said are bearers not only of worldwide fame, but they have moved the world sunward, and led mankind onward into new fields of truth. The inscription on his funeral notice strikes the keynote of his life:

"I thirst for truth,
But shall not drink it till I reach the source."

DISCUSSION.

DR. UDO J. WILE: It will always be a very treasured memory to me that in 1908 through the kind introduction of Sir William Osler I was privileged to visit with Sir Jonathan Hutchinson a few years before his death. He was a most remarkable looking old gentleman. He was almost blind at the time I saw him and at the same time was very successfully conducting a large practice among a very wealthy class of syphilitics. His office was on Powers street and he had an old army servitor attendant at the door. The letter that I had was an admirable introduction and I had two or two and a half hours with him at the expense of the patients in the waiting room. I am reminded particularly of his great versatility. Imagine a man who not only gained international repute as a surgeon, but was well versed in a dozen other branches of science as well. His writings on surgery alone would make fully a stack of books as high as he stood. He made the statement, however, that he loathed surgery, that he never was a good surgeon and that he felt sorry for many of the patients that came under his care. His son, Jonathan Hutchinson, Jr., is interested in surgery and it is interesting to note that Woods Hutchinson, the popular magazine writer is a nephew of old Sir Jonathan Hutchinson.

I was invited by him at that time to go to Haslemere and to attend one of his informal lectures. The lecture was a rambling sort of affair that lasted practically the whole afternoon and touched practically every subject that you could think of, paleontology, zoology, surgery, dermatology, and then wandered off to the planets, and of all he spoke not as a tyro but as a master. He knew about all of these things. It was told of him by one or two of his acquaintances at London that his presence at medical meetings was always a matter of chagrin to the other doctors. Somebody with great eclat would tell about a supposedly rare case that he had run across and was unable to find another case like it in the literature. Then it usually happened that Sir Jonathan would get up and say that he had photographs of three or four such cases in his atlas of rare diseases which he had reported many years ago.

I am going to pass around what Hutchinson called the "Small Atlas of Clinical Illustrations" which he inscribed to me. This being the smaller atlas, shows the immense versatility of the man.

I think the Society is indebted to Mr. Kingery for this very interesting paper.

The Autolysin Treatment.—There were strong evidences from the beginning of a commercial spirit in the exploitation of this treatment. Letters sent to physicians further illustrate the method of promoting this unproved and possibly dangerous treatment. Dr. Richard Weil, who had the opportunity of personally witnessing the application of this compound in a long series of cases at the General Memorial Hospital, expresses the belief that autolysin is useless, that it adds nothing of value to the methods now generally accepted, and that it often aggravates the sufferings and accelerates the death of the patient (*Jour. A.M.A.*, Nov. 6, 1915, p. 1641, 1647 and 1662).

The Journal
OF THE
Michigan State Medical Society
ISSUED MONTHLY UNDER THE DIRECTION OF THE COUNCIL

Arthur M. Hume, Chairman Owosso.
A. P. Biddle Detroit.
W. J. Kay Lapeer.
W. J. DuBois Grand Rapids.

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The Society does not hold itself responsible for opinions expressed in original papers, discussions, communications, or advertisements.

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February

Editorials

MODERN OBSTETRICS.

The bordering on sensational articles on "Twilight Sleep," "Pre-Natal Care" and obstetrical skill appearing in popular magazines has practically subsided. We may now ask ourselves whether the propaganda is worth paying attention to. Let us give credit to the magazine editors that they published the articles with the sincere desire to educate mothers and prospective mothers to an appreciation of thoroughness in medical and surgical treatment. Let us also give them credit for having caused to a certain extent, a real, helpful and vital form of education to mothers and prospective mothers and that many women who dreaded motherhood now accept it because they know that, with the right sort of care, danger and suffering are minimized. The public has had presented to them the necessity of proper care for mother and child; that it is the right sort of economy in the home even though such services may cost a few dollars more. Or, as one editor writes:

"WHAT ARE YOU WILLING TO PAY?

"Of course, if you are not willing to pay as much for safety in confinement as for the setting of a broken arm or an operation for appendicitis, you cannot expect to have highly scientific and conscientious care in the supreme hours of motherhood. In placing a low money value on care in confinement cases, in making them the least desirable, financially, to physicians, the women of America have set the low standard of obstetrics, which in turn is responsible for the 9,000 cases of sepsis or puerperal fever which rob American homes and American children of their mothers, year after year.

"Both husbands and wives need education in the true economy of high grade medical service in confinement cases.

"A physician wrote not long ago that those of us who are interested in this educational campaign for expectant mothers are planting fear of motherhood, of pain and danger, in the minds of young women. The fear is already there, planted by years and years of mystery and old wives' tales. The modern educational campaign through 'magazine talk' is designed to remove the fear by teaching expectant mothers that safety from danger, exemption from pain, lie in intelligent pre-natal care and a high standard of medical attendance."

We grant there has been accomplished an educational result as well as an argumentative presentation of the actual necessity and importance of pre-natal care and skilled services at the time of labor. These ends, if nothing else, should call for an appreciation of the efforts set forth and cause us, as a profession, to take heed of the enlightenment that has been disseminated. In reality the articles have been medical messages that have proclaimed to the public the importance of prevention of pain, disease and unnecessary deaths through the employment of modern methods.

As such, then we cannot honestly deride the articles published. By reason of them physicians are going to be appealed to by the readers of these magazines and their friends who will no longer be satisfied with the stereotyped replies: "Don't worry, you are a fine healthy woman." "Ninety-seven per cent. of all labors are normal" and limit our pre-natal care to an occasional urinalysis.

Expectant mothers will rightfully demand detailed examinations and observation as well as the best and most progressive obstetrical and gynecological attendance.

It is our duty to give heed to these demands, that will be made upon us and to become proficient to meet their every details. The hygiene of the expectant mother, the proper interpretation of frequent blood pressure readings, pelvimetery, intoxications of pregnancy, renal functions, dirt, exercise, and all the other allied conditions must be understood, noted, and modern knowledge adapted to the maintenance of their physiological state of normality. He

who renders such skillful service will find that he will be engaged by the enlightened, expectant mother and that his ability to render such service is the primal reason for the confidence bestowed in him. No longer will the $5.00, $7.00 or $10.00 man boast of the largest obstetrical practice. The modern mother will demand skill and modern attention first and give secondary heed to the financial consideration. The cheap obstetrician will speedily find that his asset of "cheap service" will quickly leave him stranded, high and dry on the waiting list of tabooed accoucheurs.

We may well admit that these articles have occasioned the necessity of our paying attention to the educational results that these popular magazine discussions are awakening in the minds of the public.

INDIVIDUALIZATION IN INFANT FEEDING.

(Continued from last month).

Having determined the formula, the size and number of feedings, and the intervals, we have also to consider such details as bottles, nipples, cleanliness, refrigeration, etc. We must also know about the milk we feed, its composition, its total acidity and sometimes its bacterial content. When the total acidity is above thirty—one does not need a bacterial count to know that such milk is unfit for an infant. If a proprietary food is to be used in connection with or in place of milk, its composition ought to be known or its intelligent use is impossible. The formulae present on their labels are for the average million and offer little or no comfort to the infant who is in trouble.

There is no antagonism as between the caloric and the percentage methods of feeding, the one supplements the other. By the caloric method we determine the number of grams of fat, sugar and proteid required to supply a sufficient and balanced ration; by the percentage method we translate into ounces the quantities to be measured by mother or nurse.

The outfit required for the small amount of laboratory work essential to rational work in feeding is simple and inexpensive. For the Babcock fat test—a four tube apparatus complete with bottles, pipette, graduate and acid may be obtained for $5.00, and this instrument will suffice for general centrifugal work as well, or for a small sum you may obtain an attachment to use with your power centrifuge. A graduated burette and 5 cubic centimeters pipette for use in determining total acidity and the hydrometer for specific gravity, most of you already have. The chemicals required are few and inexpensive, even for the detection of adulterants.

Having determined the size and number of feedings to be given we have to estimate the required caloric values. It is usually quite safe to allow 50 calories per pound up to three months, 45 calories from three months to six months and 35 to 40 calories between six months and a year.

At the Pediatric Clinic of the University of Michigan Hospital, we have found it convenient and satisfactory in developing a formula, to begin with the minimum proteid requirement which we arbitrarily increase as follows: Beginning with 1 gram per pound—1/10 gram per pound is added each three months up to one year, or roughly, 1/10 of your calories should come from proteid.

By the method we use, a child weighing 15 pounds at six months would need 675 calories and 18 gram of proteid. The amount of sugar may be computed either by allowing 6 per cent. of the volume of the food to be given or from 4 to 5 grams per pound weight; at 4 grams per pound the 15 pound baby would get 60 grams. Thus he would get 78 grams of proteid and sugar with a caloric value of 320 i. e. 78 x 4.1 which is their caloric value per gram. As the infant requires 675 valories it is plain that this number less 320 or 345 calories must come from fat.

Fat having a value of 9.3 calories per gram —345 divided by 9.3 or 37 grams will be required.

The caloric formula then reads:

Fat 37 grams; sugar 60 grams; proteid 18 grams.

In practically all dilution work we ignore the salts as they are always in sufficient and sometimes in excessive quantity. With children who have a tendency to exudative disturbance, such as eczema, edema, etc., whey feeding is often a disturbing factor as practically all the salts of the cow's milk appear in the whey and this being three times the salt content of mother's milk, the salt balance may be much upset, with very unpleasant consequences. You will readily see that the percentage formula will depend entirely upon the quantity of liquid in which the solid elements are served.

I feel that the high dilution that may be required to give a low percentage formula more often makes trouble than the moderate dilu-

tions employed with wide feeding intervals and a feeding not more than 1 ounce in advance of the infant's age in months. Our six months infant would thus get five feedings of 7 ounces each or a total of 1050 cubic centimeters, which would give a percentage formula of:

Fat 3.5 per cent.; sugar 5.8 per cent.; proteid 1.7 per cent.

The easiest and most economical way to obtain this is by simple dilution of a suitable top milk which may as a rule be obtained from a single quart of milk which should contain at least 4 per cent. of butter fat. As the proteid of cow's milk is fairly constant at about 3½ per cent., we use the ratio of the required proteid per cent. to this, as a means of determining the required percentage of fat in our top milk.

In our formula of fat 3.5 per cent.; sugar 5.8 per cent.; proteid 1.7 per cent., one part of milk and one part of water will give the desired proteid, hence a top milk containing 7 per cent. fat will be required.

As cow's milk very constantly contains 4½ per cent. sugar, it is easy to compute the difference between the grams contained in the ounces of milk used and the number of grams required. The 17½ ounces we are to use will contain 23.6 grams, so the amount required to make up the 60 grams will be 36.4 grams.

Different sugars vary greatly as to volume, so the physician should weigh out the grams of whatever sugar he proposes to use and then measure this in a graduate, for the giving of directions to mother or nurse.

In a series of observations covering more than 100 samples of milk, I have found that a top milk of any desired richness up to 9 per cent. may be obtained by using the following formula:

Fat per cent. in milk; fat per cent. desired :: X : oz. in container.

If we have a 5 per cent. milk and desire a 7 per cent. top milk, the formula would read for a quart bottle.

5 : 7 :: X : 32=23 oz. top milk.

The use of milk poorer than 4 per cent. fat is not feasible.

The bottle should be allowed to stand four hours after delivery and the top milk secured by syphoning from the bottom the ounces that are not wanted; thus leaving the cream wholly undisturbed.

As most of the cream has risen into the top half of the bottle, at the time of skimming, I find that the top milk taken will average to contain 90 per cent. or more of the butter fat that we wish to obtain and this small deficiency is quite negligible in the preparation of milk mixtures. The direction to mother or nurse is simply this:

Allow bottle of milk to stand from two to four hours. Remove the bottom 9 ounces by syphon. Of the 23 ounces top milk take

Water or other dilutent	17½ oz.
36.4 grams sugar expressed in volume in graduate.	
Milk Sugar	1¾ oz.
Cane Sugar	1¼ oz.
Dextrin Malt Sugar	2¼ oz.

Divide into five bottles of 7 ounces each, plug with cotton. Keep cool until feeding. Warm by standing bottle in warm water. Feed at 6-10-2-6-10.

No formula may be more simply and easily prepared than this and the feeding from a single quart of milk is usually much appreciated by people in moderate circumstances.

The effect of the various sugars and gruels upon the rennet reactions may be readily observed in any laboratory and every doctor should know these effects before attempting to use these substances for the modification of milk mixtures.

The wide feeding intervals always permit the free use of orange juice an hour before feedings. From six months onward it is often advisable to give in connection with the milk feeding, meat broths, beef juice, yolk of hard-boiled egg, stale bread, graham crackers or boiled rice, so that one never need exceed a quart of milk, and we become sufficiently independent of milk that we may dispense with it entirely for longer or shorter periods during the second summer. In the second year I have found that banana pulp obtained by scraping and crushing ripe bananas may be advantageously given with bread, boiled rice or other cereals. This often effectually relieves constipation.

Outside a few easily digested and simple foods it is not necessary to go for the adequate nourishment of infants in the second year, and if these are given in proper amounts and at proper intervals, the child will not tire of its food, nor feel urgent need for pickles, pastry, etc.

In conclusion—Determine the need, know what you feed.

Wm. Lyon, M.D., Jackson.

DAKIN'S SOLUTION.

The antiseptic developed by Dr. Dakin and tried out in a thorough manner by Dr. Alexis Carrel in his service in the French army, is an aqueous solution of 0.5 per cent. concentration of sodium hypochlorite and is made as follows:

Dissolve in a large bottle 140 grams of dry carbonate of soda with 10 liters of sterile water. Add to this 200 grams of chloride of lime (bleaching powder) and shake well; after half an hour siphon off the clear fluid into another bottle through a cotton plug or filter paper. Then add 40 grams of boric acid to the clear filtrate. The solution is neutral to litmus, is non-irritating and is the proper strength for wet dressings and irrigations. The solution should be made fresh every three or four days. Its satisfactory use in wounds is attained by employing the following method: After the surgical condition has been treated by incising and cleansing the parts of loose shreds and foreign material drainage is accomplished by the use of a fenestrated drainage tube introduced to the depth of the wound. The wound is then gently packed with gauze saturated in the solution. Dressings now are placed over the wound to let the tube protude. The tube is then connected with a "Drip apparatus" containing the antiseptic, which latter is allowed to enter by slow drops, usually 30 to 50 drops per minute. The dressings are renewed once or twice a day. As the infection subsides the tube is removed and moist packing and pads employed.

When properly carried out this treatment will usually practically sterilize a wound in from three to four days. A very valuable feature of this antiseptic is its remarkable power of quickly separating and dissolving necrotic material in the wound and early separation of sloughing material.

Editorial Comments

The Council upon the recommendation of the Houghton County Medical Society has selected the date of August 16 and 17 for our Fifty-first Annual Meeting. That is the season of the year when the Copper County is favored with exceptional weather. The opportunity presents for combining work with pleasure and a most delightful outing and profitable meeting is looked forward to.

Aspirate and if necessary reaspirate a joint to keep down the tension in the capsule, thereby lessening the amount of destruction of the non-vascular synovial layer, and then inject it with a 2 per cent. solution of formalin in glycerin to make the fluid in a joint sterile, or a poor culture medium, and to increase the polymorph leukocytosis, which factors mean increased resistance.

Your 1916 dues are payable to your County Secretary. Do not cause a lapse of your legal protection by failing to pay your dues promptly. February may bring long and hard drives out in the cold but that it is not a sufficient excuse to absent yourself from your county meetings.

Many of the standard preparations that came under the Harrison Act have been altered in the amount of the opium deriative they contain so as to become exempt. The change has not altered their efficaciousness but has done away with much annoyance.

We sometimes wonder how many of us really appreciate the good work that is being done by the Council on Pharmacy of the A.M.A. and take the trouble to record our appreciation by supporting its efforts. No other movement by the organized profession has accomplished so much, expended so much or worked so consistently in the interest of the individual doctor. The Council is entitled to our whole hearted support.

The *Journal* has been favored with some very desirable advertising contracts and the reader's attention is directed to our advertising pages with the request that he exert his individual influence to the extent that our advertisers may be the recipient of goodly returns upon their investment in your publication.

The full proceedings of the January Council Meeting will be found elsewhere in this issue.

The experience of some of the nations now at war should serve as a solemn warning to us to see that injured soldiers do not lose their lives or their limbs for want of competent surgeons. Adequate organization should be made in times of peace. Supplies and instruments, owned by the government, should be stored in accessible locations. Units should be organized and should meet annually. Crile suggests the following unit adequate to serve a base hospital of 500 beds; Chief Surgeon; five associate Surgeons, each in charge of 100 beds; three assistant Surgeons; Orthopedic Surgeon; three Anesthetists; Pathologist and assistant; Internist; Neurologist, Oculist; two Dentists; two Roentgenologists; Secretary and Record Clerk; two stenographers; fifty nurses. Would it not be well for the profession of this state to take the necessary steps to organize several such units?

The Annual Meeting of the American Medical Association in Detroit this coming June is being prepared for in a most active and businesslike manner by the Committee on Arrangements composed of Detroit physicians. No Michigan man should absent himself from that meeting. The profession of the entire state should co-operate with our Detroit members to make it the biggest, best and most pleasant meeting of our national organization.

THE DOCTOR'S WIFE.*

MRS. VENNEMA.

"The Doctor's Wife"—this is the story
They've asked me to tell to you now.
I don't see the use, you all know it;
I should really sit down with a bow.

But since Mr. Toastmaster frowns so
With looks so forbidding and stern,
I dare not sit down, so please listen
I'll try now my dinner to earn.

"The Doctor's Wife," Dear me! How shall I
Begin the sad tale of her woe.
She's busy from dawn until even
With troubles you, all of you, know.

Bell-br-r-r-r-r-r-r-r-r

Gracious goodness! Where is that telephone? Won't some one please answer it? Well, I suppose I'll have to.——Hello, yes, this is the doctor's office. —No, the doctor isn't here just now——Yes, I can find him—I always know just where he is——Sure, I'll send him at once.——What? You think the baby swallowed a pin?——Is the baby choking? Ah, I see you just missed a pin!——Sure, he can tell—I'll send him up right away.——Good-bye.

When the Doctor's wife goes to a party
She dresses up all nice and fine,
And sits down at ease in her parlor
In patience her soul to resign.

For she never knows what hour or minute
Her husband will have to depart;
She never knows how she will get there
And sometimes with tears her eyes smart.

Bell-br-r--r-r-r-r-r-r-r-r

Hello, hello,—Yes, this the house.——For the land's sake, what's the matter now?——Sure, just as I expected, going alone is getting to be habit with me. Say, if we ever went anywhere together people would talk!——Sure I know you can't help it but some other woman always wants you when I do and *she gets you!*——No, I won't cry, please hurry, won't you? Good-bye.

The Doctor's wife sits at her sewing
There are dozens of things she should mend,
There are stockings with holes big and ugly
And buttons to sew without end.

She's glad of a chance to accomplish
These tasks that have troubled her so,
This nice quiet hour now before her
Is fine, when she sits down to sow.

Bell-br-r--r-r-r-r-r-r-r-r

Hello. hello,—Yes, this is the doctor's——Yes, you need him at once?—Sure, I know where he is——right away——all right. Hello central, give me x23 please. Hello, is the doctor there?——Thank you! —(Oh, dear! why didn't he leave a list) Hello central, No. 13 please.——Hello, is the doctor there? —Thank you.

Bell-r-r-r-r-r. Hello,—Yes, yes I found the doctor, he has started,—sure all right he'll be there soon, ——Good-bye. Central give me 456.——Hello is the doctor there.—Thank you, may I speak to him?—— say, they want you right off at "Harmony Corners," —I told them you were on the way,——all right—— Good-bye.

At the table the doctor's wife, stately,
is looking quite happy and bland.
Her family all are together;
A delightful hour is now at hand.

For the doctor has said, "Well, I'm through dear,
Lets dine now and go to a show;"
A nice happy evening in prospect,
Her face all alight and aglow.

Bell-br-r--r-r-r-r-r-r-r-r

Hello, hello,—Hello, long distanec! Yes—Hello, Birch Creek,—You want the doctor?—Won't he have time to eat his dinner? Oh! yes, I understand, been sick since week before last so you're in a hurry!—— Well, all right he'll go right away.—Good-bye.

Some nice afternoon to her fireside
The doctor's wife asks a few friends,
They sit down to play bridge together,
And jolly the talk that ascends.

She picks up her cards and bids "no trump,"
Four aces she see in her hand!
She'll make a "grand slam" now, she knows it,
In all suits she has the command.

Bell-br-r--r-r-r-r-r-r-r-r

Hello, hello,—Yes, Mrs. Smith, I am sure the doctor is on his way—(Mercy on me! I forgot to give him that call!)—Yes, he knows all about it and I'm sure he will be there soon—he had several calls you know—Yes, certainly, I'll remind him—thank you. Good-bye.

At night when the [illegible]n is a shining
And the stars in the s[illegible]eem to burn,
The doctor's wife lies [illegible]wn, so tired
She hardly knows which way to turn.

She hopes she may sleep and be rested;
Her thoughts travel out o'er the world:
She sighs as she turns on her pillow
And the banner of sleep is unfurled.

Bell-br-r--r-r-r-r-r-r-r-r

Hello, hello— Hello, hello—Yes. this is the doc-

*Read at the Annual Meeting Menominee County Medical Society, Dec. 8, 1915.

tor's,—Yes, wel, I'm not sure whether he is home or not,—who is it please? (Say, Doctor, Mr. Jones needs you right away on a case—what?—hasn't paid for the *last two!*) Hello, Mr. Jones,—No the Doctor isn't in; I think he must have been called to Marinnette while I was asleep—I am *so* sorry, wish I could find him for you. Good-bye.

As she comes to the gates of here-after,
And the books of St. Peter unfold,
He'll see all the black marks against her,
His face will then grow stern and cold.

But as he looks farther and farther,
And notes how she put in this life,
He'll say, with a fine benediction,
"Pass in—you're a doctor's wife!"

But it all has its compensation,
Much pleasure and joy thro' the strife;
And I know if I had to choose over
I'd again be *The Doctor's Wife!*

Deaths

Dr. J. B. Dodge, of St. Johns, died at Harper Hospital, Detroit, Jan. 12th, as the result of a serious operation. He has practiced in St. Johns for 23 years and enjoyed the respect and esteem of all with whom he came in contact. He was a man of high honor as well as a successful practitioner and good business man.

Dr. A. I. Noble, Superintendent, of the Kalamazoo State Hospital died at the Hotel Tuller, Detroit, Jan. 20. His death was a great surprise to everyone as, while he had been suffering from the grip for some time, his condition was not regarded as serious.

Dr. Harold Banks, of Brookfield, died Jan. 5, 1916. He was a well known physician in this vicinity and had made many friends.

Dr. E. Parke Edwards, of Detroit, died Jan. 11 at his home 2955 Woodward Avenue. He was a prominent Highland Park physician.

Dr. Wesley Townsend, of Sault Ste Marie, died as a result of a fall on the ice while engaged in curling. He was one of the best known physicians there having practiced in that vicinity for nineteen years.

The Midwinter Meeting of the Council of the Michigan State Medical Society held in Detroit, Hotel Statler Jan. 18-19, 1916

The midwinter meeting of the Council of the Michigan State Medical Society was called to order at Hotel Statler at 8:30 p. m. January 18, 1916, Chairman Dr. Dodge presiding and the following Councilors present:

Dodge, Bulson, Seeley, Kay, DuBois, Church, Witter, Hume, Kiefer, President A. W. Hornbogen, the Secretary-Editor, and F. B. Tibbals, Chairman Medico-Legal Committee.

The Secretary read his annual report as follows:

ANNUAL REPORT OF THE SECRETARY-EDITOR FOR 1915.

To the Council and Members of the Michigan State Medical Society.

Gentlemen: In compliance with the enacted requirements I have the honor of submitting to you my annual report for the year closing December 31, 1915. In conforming with this requirement I desire at the very outset to express my appreciation of being privileged to have served our society in an official capacity and for the trust imposed.

Secondly, I desire to thank not only the Council, but also the entire membership for the splendid co-operation they have at all times tendered me. This report is not the reflection of a single individual's effort, on the contrary, it reveals the activities and status of our composite State Society and the united efforts of the medical men of Michigan.

FINANCIAL REPORT

EXHIBIT A.

Trial Balance December 31, 1915.

Certificate of Deposit a/c	$1,064.97	
Bond a/c	4,300.00	
Checking a/c G. R. Savings Bk.	1,154.91	
Accounts receivable	750.82	
Journal expenses	5,569.29	
State Society expenses	1,420.38	
Secretary's expenses	77.24	
Council expenses	366.19	
Reprint expenses	792.67	
Annual meeting	447.15	
Bad accounts charged off	44.98	
Membership dues		$2,395.60
Journal subscriptions		2,403.87
Advertising sales		3,827.66
Reprint sales		784.44
Sale of extra Journals		10.50
Interest received		284.92
Defense fund a/c		140.75
Present worth		6,140.86
	$15,988.60	$15,988.60

Exhibit B.

Statement of Revenue and Expenses for the Year 1915.

REVENUE—

Membership dues	$2,395.60	
Journal subscriptions	2,403.87	
Advertising sales	3,827.66	
Reprint sales	784.44	
Sale of extra journals	10.50	
Interest received	284.92	
		$9,706.99

EXPENSES—

Journal	$5,569.29	
State society	1,420.38	
Reprints	792.67	
Annual meeting	447.15	
Council	366.19	
Secretary	77.84	
		8,672.92
Net gain for year 1915		$1,034.07

Exhibit C.

Balance Sheet, January 1, 1916.

ASSETS.

CURRENT—

Checking acc't G. R. Sav. Bk.	$1,154.91	
Accounts receivable	750.82	

INVESTMENTS—

(In custody of Treas.)

Certificate of Deposit Acct.	1,064.97	
Masonic Temple Ass'n. Bonds	2,300.00	
Edwards & Chamberlain Hardware Co. bonds,	2,000.00	
Total assets		$7,870.70

LIABILITIES.

CURRENT—

Due defense fund		140.75
Present worth		$7,129.75

Represented by

Present worth, Jan. 1, 1915	$6,097.86	
Less uncollectible accounts receivable incurred previous to Jan. 1, 1915	44.98	
		$6,052.88
Amount forward		$6,052.88
Correction Defense fund a/c	43.00	
Net gain for 1915	1,034.07	
Present worth		$7,129.95

ITEMIZATION OF EXPENSES.

JOURNAL EXPENSE.

JANUARY—

West's Drug Store, January rent	$ 7.50	
F. C. Warnshuis, January salary	62.50	
Postmaster, January Journal	16.81	
Tradesman, January Journal	386.83	
Miss Taylor, January salary	25.00	
Barlow Bros., binding Journals	15.00	
G. R. Typewriting Co., mailing list	1.49	
West's Drug Store, February rent	7.50	
		$522.63

FEBRUARY—

Tradesman Co., Journal wrappers	$ 87.00	
Tradesman Co., Feb. Jour. and Engravings	401.91	
		488.91

MARCH—

Miss Taylor, February salary	$ 25.00	
F. C. Warnshuis, February salary	62.50	
West's Drug Store, March rent	7.50	
A. Griffen, clippings	10.50	
Postmaster, Feb. Journal postage	17.20	
Tradesman Co., March Journal and cuts	393.98	
Miss Taylor, March salary	25.00	
F. C. Warnshuis, March salary	62.50	
West's Drug Store, April rent	7.50	
		611.68

APRIL—

G. R. Typewriting Co., adddresses	$ 14.99	
Postmaster, Journal March and April	37.07	
Tradesman Co., April Journal	262.72	
Miss Taylor, April salary	25.00	
West's Drug Store, May rent	7.50	
F. C. Warnshuis, April salary	62.50	
		409.78

MAY—

Tradesman Co., May Journal	$355.60	
Postmaster, May Journal	13.90	
		369.50

JUNE—

Miss Taylor, May salary	$ 25.00	
West's Drug Store, June rent	7.50	
F. C. Warnshuis, May salary	62.50	
Tradesman Co., June Journal	297.95	
Postmaster, June Journal postage	12.81	
		405.76

JULY—

A. Griffen, clippings	$ 14.00	
G. R. Typewriting Co., addresses	1.71	
Tradesman Co., July issue	281.55	
Miss Taylor, June salary	25.00	
F. C. Warnshuis, June salary	62.50	
		384.76

AUGUST—

F. C. Warnshuis, July salary	$ 62.50	
Miss Taylor, July salary	25.00	
Geo. A. Murphy, advertising commission	47.50	
West's Drug Store, postage	5.00	
Tradesman Co., August Journal	420.79	
		560.79

SEPTEMBER—

Miss Pinckney, July salary	$ 25.00	
F. C. Warnshuis, July salary	62.50	
Tradesman Co., September Journal	293.10	
Postmaster, September Journal postage	12.81	
Miss Pinckney, August salary	25.00	
West's Drug Store, postage	5.00	
		423.41

OCTOBER—

Certificate of Deposit	$ 25.00	
Postmaster, mailing Journal	15.00	
		40.00

NOVEMBER—

Tradesman Co., Engravings and halftones	$117.45	
Tradesman Co., Oct. and Nov. Journals	602.35	
Miss Pinckney, stenographer	25.00	
		744.80

DECEMBER—

Postmaster, mailing Journal	$ 35.38	
A. Griffin, clippings July to Jan.	21.00	
Miss Pinckney, Nov. and Dec. salary	50.00	
F. C. Warnshuis, Nov. and Dec. salary	250.00	
Tradesman Co., December Journal	274.28	
Postmaster, mailing Journal	12.11	
		..642.77

SOCIETY EXPENSE

JANUARY PART OF FEBRUARY—

West's Drug Store, postage	$ 25.00	
West's Drug Store, January rent	7.50	
F. C. Warnshuis, January salary	62.50	
Miss Taylor, January salary	25.00	
West's Drug Store, February rent	7.50	
West's Drug Store, postage	25.00	
		152.50

PART OF FEBRUARY AND MARCH—

Miss Taylor, February salary	$ 25.00	
F. C. Warnshuis, February salary	62.50	
West's Drug Store, March rent	7.50	
West's Drug Store, postage	20.00	
Miss Taylor, March salary	25.00	
F. C. Warnshuis, March salary	62.50	
West's Drug Store, April rent	7.50	
West's Drug Store, postage	10.00	
		220.00

APRIL—

Powers & Tyson, envelopes	$ 7.00	
Miss Taylor, April salary	25.00	
West's Drug Store, May rent	7.50	
West's Drug Store, postage	15.00	
F. C. Warnshuis, April salary	62.50	
		117.00

MAY INCLUDED IN JUNE—

JUNE—

Miss Taylor, May salary	$ 25.00	
West's Drug Store, June rent	7.50	
West's Drug Store, postage	10.00	
F. C. Warnshuis, May salary	62.50	
W. Haughey, stationery Annual Meeting	5.25	
		110.25

JULY—

Tradesman Co., T. B. Committee blanks	$ 17.00	
West's Drug Store, July rent	15.00	
West's Drug store, postage	15.00	
Miss Taylor, June salary	25.00	
F. C. Warnshuis, June salary	62.50	
J. A. Wessinger, Annual Meet. Sec'y notices	3.45	
		137.95

AUGUST—

F. C. Warnshuis, July salary	$ 62.50	
Miss Taylor, July salary	25.00	
West's Drug Store, postage	5.00	
West's Drug Store, August rent	15.00	
Tradesman Co., T. B. blanks	19.25	
		126.75

SEPTEMBER—

West's Drug Store, September rent	$ 15.00	
Miss Pinckney, August salary	25.00	
F. C. Warnshuis, August salary	62.50	
West's Drug Store, postage	10.00	
Bixby Office Supply Co., supplies	4.50	
Western Union	2.73	
Miss Pinckney, September salary	25.00	
West's Drug Store, September rent	15.00	
West's Drug Store, postage	5.00	
		164.73

OCTOBER AND NOVEMBER—

Tradesman Co., letter heads	$ 42.20	
Miss Pinckney, September salary	25.00	
West's Drug Store, October rent	15.00	
		82.20

DECEMBER—

David Forbes Co., Notary Seal	$ 2.00	
Powers & Tyson Co., 3 M. envelopes	7.00	
Miss Pinckney, Nov. and Dec. salary	50.00	
F. C. Warnshuis, Sept., Oct. Nov. and Dec.	250.00	
		309.00

COUNCIL EXPENSE.

JANUARY—

Whitney Hotel, Ann Arbor, Annual Council Meeting	$ 15.50	
C. J. Ennis, Council expense	31.52	
Miss Taylor, Council Meeting, Ann Arbor	4.82	
F. C. Warnshuis, Expense Council Meeting, Miss T. and F. C. W.	18.52	
W. T. Dodge, Councilors expense	12.75	
F. C. Witter	68.68	
		151.79
Mar. 2. W. H. Shultus		19.50
Mar. 30. G. R. Typewriting Co., transcribing Society records		100.00
April 12. J. S. Crosby & Co., Bonds Secy. Treas.		12.50
May 12. A. S. Seeley, Councilors		22.00
Sept. 15. Peninsular Club		60.40

SECRETARY'S EXPENSE.

Jan. 31. F. C. Warnshuis, Petoskey & Kazoo	$ 21.83	
May 12. F. C. Warnshuis, Saginaw	10.23	
June 3. F. C. Warnshuis, Owosso	5.92	
Sept. 1. F. C. Warnshuis, Upper Peninsula Meeting	26.10	
Oct. 8. F. C. Warnshuis, Long Distance bill	4.14	
Dec. 2. F. C. Warnshuis, Bixby Office Supply Co.	7.30	
Telegrams and express charges	1.72	

ANNUAL MEETING 1915

Sept. 28. Tradesman Co., programs, etc.	$ 73.00	
Sept. 4, Girls for Registration	10.00	
Sept. 29, Mildred-Scott Hill, reporter	350.00	
Oct. 30. A. F. Crabb, flowers	10.00	
Nov. 30. Pantlind Cafe bill, 3 girls	4.15	
		447.00

It is indeed gratifying to report a gross profit of $1,034.95 for the year thus causing an increase of our net worth in dollars to $7,129.95. The financial unrest, business fluctations of the world at the beginning of the year made us fearful of a deficit. Rigid economy, however, enables us to report a profit, notwithstanding that we incurred an additional expense of $350.00 for reporters at our annual meeting. The end of your Secretary-Editor's three years of service closes with a net profit of $1,512.14 in spite of marked increase of expenses in every department.

Our funds are safely invested and are earning a satisfactory interest. The new bonds purchased are now quoted at 106 and draw 5 per cent.

DEFENSE COLLECTION.

Your Secretary collected $2,550.25 of Defense Funds and remitted them to the Chairman of the Medico-Legal Committee whose receipted vouchers I hold. The financial statements have been checked and rechecked by the auditor and his certification of correctness is filed with the Chairman of the Finance Committee.

THE JOURNAL.

Your editor's comments and suggestions regarding the *Journal* were expressed in an editorial in the January issue and repetition is uncalled for at this time. I am content to allow the publication, as it appears from month to month, represent the time devoted to the editorial duties. The *Journal* continues to demand increased time and labor and will continue to do so if its standard is to be maintained.

Statistically I submit the following:

	Vol. XIII.	Vol. XIV.
Original articles	137	140
Total pages	998	938
Advertising pages	264	304
Editorials	58	54
Editorial comments	96	113
County Society reports	98	91
Subscription receipts	$2,385.37	$2,414.37
Advertising receipts	2,910.42	3,827.66
Total cost	6,087.37	5,369.30
Cost per page	6.09	6.04

The receipt of $3,827.66 from advertising marks the high-water mark in the *Journal's* history and make our present publication possible.

Although our increased subscribers occasioned the necessity of printing 1200 additional copies during the year we were able to save $518.07 in publication cost.

I solicit your criticisms and suggestions for the further improvement of our official publication. I venture to suggest the advisability of investigating the desirability of interviewing the State Dental Society officials and members with the view of determining the desirability of adding a Dental Department to our *Journal* for the publication of scientific papers on subjects of that profession closely allied to medicine and surgery as well as to give the dental profession of Michigan an official organ of publication. I am inclined to believe such an inovation desirable scientifically and financially and a means of increasing the scope, prestige and value of our publication. The suggestion merits discussion and consideration.

ANNUAL MEETING.

It is incumbent upon the Council to select the date for the holding of our Fifty-first Annual Meeting in Houghton. In doing so it must be remembered that the House of Delegates elected to hold its first meting on the evening previous to the first General Session.

The Fiftieth Annual Meeting was most successful and has been duly recorded in our archives. Your instructions are requested in regard to employing reporters for our Fifty-first Annual Meeting. The authority of again entertaining the County Secretaries at a dinner is requested.

COUNTY SOCIETY AND STATE WORK.

Herewith I submit data that reveals the status of our general component units.

Our membership in 1914 was 2,385 members in comparison with 2,399 members in good standing on Dec. 31, 1915. Four societies held no meetings.

The above figures contain much food for study, reflection, discussion and action. In comparison with a similar report rendered last year progress is recorded and a more satisfactory condition prevails. There remains, however, abundance of room for still further improvement. With but a few exceptions we are well organized as far as numbers are concerned and to-day we are able to boast of the largest number of doctors residing in Michigan as members of our organization.

Mere membership is, however, not self sufficient if we desire to attain to its fullest extent the chief objects of organization. The medical society of today is the great post-graduate school of the profession where knowledge is increased and the individual character developed. The enthusiasm engendered, the energy awakened by the attrition of mind against mind in the medical society cannot be otherwise than of incaluable value. Our ends sought should be: One compact society with a view to the extension of medical knowledge and the advancement of medical education and the enforcement of just medical laws. To the promotion of friendly interests and to the enlightenment and direction of public opinion in regard to the great problems of state medicine so that the profession shall become more capable within itself and more useful to the public in prolonging and adding comfort to life.

The reports received indicate that many of our members ignore these objects. There exists a palpable state of apathy that demands consideration and steps for arousing increased interest and activity. I earnestly recommend that you determine upon some measure to build up the society work in Barry, Berrien, Branch, Cass, Gogebic, Livingston, Midland and Osceola-Lake Counties.

The suggestion has been made that Cheboygan and Presque-Isle Counties be combined to form one society. The advisability of doing so should be determined.

Gratiot and Isabelle-Clare voted to combine and request the Council to ratify their action.

Your Secretary respectfully suggests that each councilor arrange with the several societies of his district to hold a special meeting during each year. Such a meeting to have an attractive list of scientific papers and to end with a dinner during which the necessity of organization activities and enthusiasm be aroused. A series of such meetings is bound to awaken new life.

I further recommend that steps be taken to induce component societies to hold meetings more frequently than two to four times a year. Monthly meetings should be the rule. Reverting back to the statistical report it will be noted that the societies holding monthly meetings are the live societies. The apathetic ones are those who held but two or three meetings a year. It is only possible to maintain interest and eradicate apathy by bringing members in frequent contact. It is incumbent upon us to inject this

COUNTIES	Doctors	Mem.	Non-Mem.	% Mem.	Meetings	COMMENTS
Alpena	24	20	4	83	12	Enthusiasm and successful meetings.
A. C. E.	36	29	7	95	8	25 per cent. turn out.
Barry	29	0	29	0	0	
Bay						
Benzie	10	6	4	60	2	No comments.
Berrien	77	28	49	36	3	No comments.
Branch	34	13	21	34	4	No comments.
Calhoun	117	95	22	85	10	One of our best units. Live, active Secretary.
Cass	33	14	19	43	3	Some belong to Kalamazoo.
Cheboygan	14	6	8	46	3	Suggested union with Presque Isle.
Chippewa, Luce and Mackinaw	43	28	15	76	10	Good meetings.
Clinton	31	27	4	88	10	Active.
Delta	26	20	6	77	8	No comments.
Dickinson-Iron		6				
Eaton	49	41	8	81	6	Good meetings. Good work.
Genesee	93	81	12	87	12	6 Eligible M.D.'s non-members. Active mtgs.
Gogebic	24	16	8	75	1	Remaining men become affiliated first of year
Gd. Trav.-Leelanaw	30	25	5	70	11	14 papers, 1 address, 1 clinic, good meetings.
Gratiot	32	27	5	90	8	United with Isabella-Clare.
Hillsdale	42	19	23	45	4	Apathy.
Houghton, Baraga, Keweenaw	64	49	15	76	13	Non-members are internes.
Huron		13				
Ingham	80	65	15	80	8	Greater interest desired.
Ionia	30	20	10	67	10	Marked improvement past year.
Isabelle-Clare	21	15	6	60	2	United with Gratiot to form larger society.
Jackson	72	47	25	66	5	Good attendance and interest.
Kalamazoo	181	140	41	72	27	Most satisfactory.
Kent	210	157	53	78	18	Well organized. Active.
Lapeer	32	27	5	84	4	Well organized.
Lenawee	75	36	39	50	7	2 doctors transferred out of state.
Livingston	18	13	5	73	0	No meetings during year.
Macomb	42	24	18	50	16	No comments.
Manistee	20	14	6	70	9	Active and doing good work.
Marquette-Alger	46	41	5	89	10	Active and good meetings.
Mason	16	13	3	85	0	Secy. says he we'll hear from them this year.
Mecosta	18	18	0	100	3	Last year no meetings. This year three.
Menominee	14	12	2	86	6	Well organized. Good meetings.
Midland	10	7	3	70	0	No interest. No meetings.
Monroe	30	24	6	80	4	No comment.
Montcalm	33	25	8	76	4	Active meetings. Good work.
Muskegon-Oceana		39				No report.
Newaygo	16	9	7	60	1	Transportation obstacles.
Oakland		42				No report.
O. M. C. O. R. O.	20	16	4	80	6	Good.
Ontonagon	10	9	1	99	1	
Osceola-Lake	12	6	6	50	1	Part of membership belongs to Wexford.
Ottawa		30				No report.
Presque-Isle		3				Suggested affiliation with Cheboygan.
Saginaw	90	61	29	70	4	Good work but more meetings.
Sanilac	33	13	20	39	2	Apathy. More frequent meetings.
Schoolcraft	6	6	10	100	1	Society in name only.
Shiawasse	41	27	14	66	7	Good meetings. Active.
St. Clare	68	55	13	95	10	Active in their work.
St. Joseph	21	14	7	67	4	Apathy. Good material.
Tri-County	26	22	4	90	9	Kalkaska and Missaukee doctors not interested. Steps to interest them advised. All Wexford county doctors members.
Tuscola	37	30	7	82	6	An active valuable organization.
Washtenaw	120	88	32	75	4	12 new members elected at last meeting.
Wayne	1000	658	320	68	17	Would that every society had this enthusiasm and good spirit.

antidote for the existing apathy in certain component units.

There remains much more to be said upon the subject. I have only attempted to direct your attention to the necessity of devoting greater effort to this phase of our society's welfare. Again, I repeat that, mere membership is not all sufficient. Organized effort has vouchsafed most of our present attainments and the prestige we now enjoy. By means of concentrated efforts of co-operation we may increase this individual and collective influence and asset to our future advantage. As has been said: "Our Society is more than a group of physicians who meet once a year to read and discuss scientific papers."

During the year I visited, by invitation: The Annual Meeting Upper Peninsula Medical Society, St. Joseph County, A. C. E., Saginaw and Shiawasse societies. With but one exception I have accepted every invitation extended. In the exception personal affairs made it impossible to be present at the date designated.

CONCLUSION.

If in the foregoing I have caused to be recorded the activity of my office and in so doing have measured up to the responsibilities conferred and merited your approval I shall feel that the many hours devoted in the performance of the work were expended productively for our State Society and thank you for being so privileged.

Signed,

F. C. Warnshuis, Secretary-Editor.

The Chairman referred the several portions of the report to the respective committees on Finance, County Societies and *Journal* for report and recommendation at the morning session of the Council.

MEDICO-LEGAL COMMITTEE

The Chairman of the Medico-Legal Committee, F. B. Tibbals of Detroit, presented the following report:

To the Council of the Michigan State Medical Society:

The following will convey to you the amount of funds on hand in the Defense Fund for the year ending December 31, 1915.

Certificate of Deposit, Commercial Savings Bank, Grand Rapids	$1,500.00
Certificate of Deposit, Commercial Savings Bank, Grand Rapids	639.14
Checking account of Peoples State Bank, Detroit, Including interest	1,509.72
Total	$3,648.86

Respectfully submitted,

D. E. Welsh, Treasurer.

To the Council Michigan State Medical Society:

Gentlemen: The Executive Board of the Medico-Legal Committee beg to report as follows:

A total of 145 cases have been reported to us during six years, twenty-five of these during 1915 The average of one threat or suit, annually, for each hundred members continues. Suit has been started in twelve of the 1915 cases. The cause of action alleged is, improper treatment of fractures, seven cases; negligence in surgical work, four cases; fatal placenta previa, sloughing from intravenous use of neo-salvarsan, failure to use vaccines in an acute gonorrhea, one each; and various faulty diagnoses or treatment of a trivial character in the other cases.

We have tried six cases during the year and won all of them, a case of alleged death from chloroform, in the Upper Peninsula was especially hard fought, the jury being out nearly twenty-four hours before bringing in a verdict for the doctor. The two doctors who testified for the plaintiff received $100 and $75 respectively and did their best to earn the money. To our knowledge but one adverse verdict has been given in Michigan during 1915. This was a fracture case, handled by an Insurance Company, without any report to us, or any assistance from us, among the profession. Some local medical testimony was damaging for the plaintiff. We mention this testimony by medical witnesses to again illustrate the fact that so long as this occurs and wherever it occurs, verdicts against doctors may be expected and verdicts which it is difficult to set aside because supposedly reputable physicians have testified to exactly opposite opinions.

Several of these 1915 suits are expected to reach trial and perhaps a few of those started prior to 1915 may come to life again. Financially the Fund is in good condition. It has never been necessary to touch the substantial nest egg laid away during the first year or two of our work—and we expect to be able to defend all members during the coming year as efficiently as heretofore.

Respectfully submitted,

F. B. Tibbals.
C. B. Stockwell.
Charles W. Hitchcock.

Upon motion of Dr. Seeley, supported by Dr. Bulson the report of the Chairman of the Medico-Legal Committee was accepted and ordered published in the minutes of the Council.

The Council then adjourned to meet at 9 a. m. the following morning, Jan. 19, 1916.

SECOND SESSION.

The Second Session of the Council Meeting was called to order at Hotel Statler, Wednesday morning, January 19 at 9 o'clock, Chairman W. T. Dodge

presiding, with the following Councilors present: W. T. Dodge, A. L. Seeley, G. L. Kiefer, A. E. Bulson, S. K. Church, W. J. DuBois, A. M. Hume, W J. Kay, B. H. McMullen, C. H. Baker, R. S. Buckland, F .C. Witter, C. T. Southworth, President Hornbogen and Secretary F. C. Warnshuis.

The Chairman called for the report of the Committee on Finance which submitted the following report:

To the Council of the Michigan State Medical Society, c-o F. C. Warnshuis, Secretary.

Gentlemen:

I have just completed the examination of the books and accounts for the Michigan State Medical Society for the year ending December 31, 1915, and am pleased to submit the following exhibits:

EXHIBIT A.

Trial Balance December 31, 1915.

Certificate of deposit a/c	$1,064.97	
Bond a/c	4,300.00	
Checking a/c G. R. Sav. Bank	1,154.91	
Accounts receivable	750.82	
Journal expenses	5,569.29	
State Society expenses	1,420.38	
Secretary's expenses	77.24	
Council expenses	366.19	
Reprint expenses	792.67	
Annual Meeting	447.15	
Bad accounts charged off	44.98	
Membership dues		$2,390.60
Journal subscriptions		2,403.87
Advertising sales		3,827.66
Reprint sales		784.44
Sale of extra Journals		10.50
Interest received		284.92
Defense Fund a/c		140.75
Present worth		6,140.86
	$15,988.60	$15,988.60

EXHIBIT B.

Statement of Revenue and Expenses for the year 1915.

REVENUE—		
Membership dues	$2,395.60	
Journal subscriptions	2,403.87	
Advertising sales	3,327.66	
Reprint sales	784.44	
Sale of extra journals	10.50	
Interest received	284.92	
		$9,706.99
EXPENSES—		
Journal	$5,569.29	
State Society	1,420.38	
Reprints	792.67	
Annual meeting	447.15	
Council	366.19	
Secretary	77.24	
		8,672.92
Net gain for year 1915		$1,034.07

EXHIBIT C.

Balance Sheet, Jan. 1, 1916.

ASSETS.

CURRENT—		
Checking Acct G. R. Sav. Bk.	$1,154.91	
Accounts receivable	750.82	
INVESTMENTS—		
(In custody of Treas.)		
Certificate of Deposit Acct.	1,064.97	
Masonic Temple Ass'n Bonds	2,300.00	
Edwards & Chamberlain Hardware Co. bonds	2,000.00	
Total assets		$7,270.70

LIABILITIES.

CURRENT—		
Due defense fund		140.75
Present worth		$7,129.95
Represented by		
Present worth, Jan. 1, 1915	$6,097.86	
Less uncollectible accounts Receivable incurred previous to Jan. 1, 1915.	44.98	
		$6,052.88
Amount forward	$6,052.88	
Correction defense fund a/c	43.00	
Net gain for 1915	1,034.07	
		$7,129.95

The checking account with the Grand Rapids Savings Bank was reconciled December 31, 1915, and found correct.

The Bonds and Certificates of Deposit are in the hands of the Treasurer, Dr. D. Emmet Welsh.

Would advise for your information that the books and accounts of the Michigan State Medical Society are in good condition and the above Balance Sheet Exhibit C in my opinion representes the financial position of the Michigan State Medical Society as of January 1, 1916.

It is very seldom that I have the pleasure of examining books which are as near up-to-date, at all times as those of the Michigan State Medical Society.

The net gain of $1,034.07 for the year 1915 clearly indicates that the financial affairs of the Michigan State Medical Society have been carefully handled with a view of keeping down expenses and increasing the revenues

Thanking you for the work and awaiting your further pleasure, I am,

Yours very truly,

(Signed) Walter H. Schultus,
Public Accountant.

We further recommend that an honorarium of $100.00 be paid to the Treasurer. The Committee also recommend that the salary of the Secretary-Editor be raised to $1800.00 per year for the coming year.

Moved by Dr. DuBois, supported by Dr. Kay that the report of the Finance Committee be accepted and its recommendations adopted.

Carried.

Dr. Hume, Chairman of the Publication Committee made the following report:

The Chairman read extracts from the Secretary-Editor's report that referred to the *Journal*.

In regard to the Editor's suggestion relative to adding a department for the discussion of Dental subjects, the Committee recommends that this matter be held in abeyance until further light and information may be secured upon the subject.

Moved by Dr. Church, supported by Dr. Southwick that the report of the Publication Committee be accepted.

Dr. A. E. Bulson, Chairman of the Committee on County Societies made the following report:

Your Committee would respectfully recommend that each Councilor arrange with every society in his district to hold at least one special meeting during each year; and also that at such meeting an attractive list of scientific papers should be presented as conditions will warrant. And further, that each Councilor confer with the secretary of each society in his respective district, with a view of reaching, inviting and interesting every eligible physician to atttend this meeting, which is to be followed by a dinner or other social function the main object of which is to arouse and stimulate enthusiasm and activities along organization lines. We would recommend that the societies of Cheboygan and Presque Isle be combined to form one society. As Gratiot and Isabella-Clare counties have already voted to combine, it is recommended that the Council ratify this action.

As there are four societies that have held no meetings during the past year, we recommend that the Councilors of these districts confer with the secretary of each society regarding this matter. To use every endeavor to interest every eligible physician in the country, whether a member or not, in attending a meeting, at which a proper program for the continuance of the work of the society is presented. Inasmuch as local conditions in many counties prevent monthly meetings, we would suggest that quarterly meetings, at least, be encouraged.

(Signed)
A. E. Bulson,
S. K. Church,
R. S. Buckland.

Moved by Dr. DuBois, supported by Dr. Church that the report of the Committee on County Societies be accepted and adopted.

Upon motion of Dr. DuBois supported by Dr. Buckland the date for the Fifty-first Annual Meeting of the Michigan State Medical Society was selected as August 16 and 17 and that the House of Delegates meet on the evening of August 15 in compliance with the resolution adopted by that body at its Fiftieth Annual Session.

This motion was carried.

Moved by Dr. Church, seconded by Dr. Kay that the Chairman of the Council appoint a Committee on Transportation.

Carried.

The Chairman of the Council appointed Drs. Church, Keifer and DuBois as such a Committee on Transportation.

The following resolution was presented by the Chairman of the Council:

Whereas, The request has been expressed that the Michigan State Medical Society go on record on the momentous question of National Preparedness

Therefore Be It Resolved, That as the Council of the Michigan State Medical Society, representing the profession of Michigan, do hereby wish to affirm our sincere belief in the necessity of a state of National Preparedness for the protection and conservation of our business, professional and civic life and our pursuit for livelihood and happiness.

Further Be It Resolved, That we are heartily in favor of the adoption of an efficient plan for the establishment of a Medical Reserve Force and that the Surgeon-General be authorized to accept for the Medical Reserve Corp definitely organized Medical Units capable of administering a base hospital of 500 beds.

It was moved by Dr. DuBois and seconded by Dr. Buckland that this resolution be adopted. Approved.

Moved by Dr. Hume, supported by several members of the Council, that the President cast a unanimous vote of the Council for the present incumbent as Secretary-Editor for the ensuing year with salary as amended.

Chairman than cast the unanimous vote of the Council for F. C. Warnshuis as Secretary-Editor.

Moved by Dr. DuBois, supported by Dr. Seeley that Dr. D. Emmet Welsh be re-elected during the ensuing year.

Carried.

There being no further business the Council adjourned.

W. T. Dodge, Chairman.
F. C. Warnshuis, Secretary.

State News Notes

Dr. Todd was found guilty in the Superior Court, Grand Rapids, January 12, 1916, under Section 6 of the present Medical Act, involving the following clauses:

"All advertising of medical business in which grossly improbable statements are made, or where specific mention is made in such advertisements of venereal diseases or diseases of the genito-urinary organs."

"All advertising of any matter of an obscene or offensive nature derogatory to good morals or contrary to act number sixty-two of the Public Acts of nineteen hundred eleven, entitled 'An Act to prohobit certain classes of immoral advertising.' "

The following is a copy of the advertisement of Dr. Todd under which he was convicted:

"GOOD NEWS FOR MEN.

"Are You a Nervous Wreck?

"Dr. S. Clay Todd, 316 Monroe Avenue, N. W., Grand Rapids, Mich., U. S. A. Specialist for the cure of Catarrh of Nose, Lungs and Appendix, Throat, Ulcers in Throat, Nerve, Kidney, Bladder, Urinary Diseases, etc. Are you awful weak? Trembly? Have you Asthma? Raise Water, Yellow or Brown Phlegm? Sleepy Day Times? Have you Paralysis or Threatened Paralysis? Memory Poor? Low Spirits?

"Dr. Todd's vast experience in the Americas, England, France, China and Japan gives him unbounded success as he proves to all who call at his office. Office hours, 8 a. m. to 8 p. m.

"Asthma Cured in East Lansing, Mich.

"Mrs. Geo. Hanchet says: My husband had Asthma many years; 8 months not able to work. He made such a squeaking noise with his lungs, it made me terribly nervous. I was afraid he would die before morning. Under Dr. S. Clay Todd's treatment he got entirely well in 16 days. He does not even wheeze any more.

"Cured in 1907 and has had no sign of Asthma since.—Adv."

It will be noted that the advertisement in question contains words synonymous to the specific words used in the Act, the Supreme Court holding in the Drs. K. & K. case that synonymous words and phrases were equivalent to specific words as provided in the medical and allied acts. Bringing this advertisement within the purview of a violation, it was necessary to read the advertisement as a whole, eliminating what in legal terms is known as surplusage.

The Michigan Automobile Owners Asssociation was organized March 15th, 1915 and at the present time has over 1100 paid members. Over eight hundred road signs have been placed in the Lower Peninsula and it is now possible for you to go from Grand Haven to Detroit, Grand Rapids to Bay City, Detroit to Niles and Benton Harbor by means of these signs. This work will be greatly augmented in 1916. The Association has published since last August the Michigan Motorist and has maintained in the city of Grand Rapids an office where adequate route information of several states can be secured. It has reported to the authorities several flagrant violations of the speed laws and has taken up for their subscribers through the legal department, a great many matters that have uniformly resulted in the members saving time and expense.

It is planned to introduce in the next legislature several bills that if passed will be of material benefit to all automobile owners. Their $25 Reward Card has been the means of the return of several stolen cars and the results obtained in the Inter-Insurance Exchange have been eminently satisfactory in every way—the loss ratio obtaining at this writing as a matter of fact is less than 15 per cent. In other words, after meeting the expenses of conducting the Exchange and having paid all loses promptly, they have made a saving up to this time to the members of more than 40 per cent. of the old line rates.

W. B. Saunders Company, Publishers of Philadelphia and London, have just issued their 1916 eighty-four page illustrated catalogue. As great care has evidently been taken in its production as in the manufacture of their books. It is a descriptive catalogue in the truest sense, telling you just what you will find in their books and showing you by specimen cuts, the type of illustrations used. It is really an index to modern medical literature, describing some 300 titles, including 45 new books and new editions not in former issues.

A postal sent to W. B. Saunders Company, Philadephia, will bring you a copy—and you should have one.

Dr. W. S. Walkley entertained the members of the Grand Haven and Spring Lake Medical Society Monday evening the occasion being his birthday anniversary. Dr. J. N. Reynolds in behalf of the society, in a short address full of fun, pathos and remembrance, presented the doctor with a beautiful gas lamp. Following a short program, there was a fine birthday supper, after which there was a smoker and social chat. Dr. Walkley has been a good citizen and loyal doctor for many years, and his friends throughout the city, with the medical society, wish him many happy birthdays to come. Those present were: Dr. Arend VanderVeen, Dr. J. N. Reynolds, Dr. Edward Hofma, Dr. W. J. Presley, Dr. C. E. Long, Dr. Stewart DeWitt, Dr. H. J. Cherry, and Dr. P. M. VanderBerg of Grand Haven and Dr. C. P. Brown and Dr. C. D. Mulder of Spring Lake.

Col. Legarde, of the U. S. army, will deliver the annual founder's day address of the medical school of the university on February 22. Colonel Legarde is recognized as an authority on gun-

shot wounds, and his topic will be "The dum dum myth."

Founder's day will mark the unveiling of the recently completed portrait of Dr. V. C. Vaughan, dean of the medical school, the work of Gari Melchers of Detroit.

The address of Col. Legarde will be the last of a series of lectures given here. Beginning on February 18 and continuing for three days, Dr. Lagarde will speak to medical students twice a day on military surgery.

The Twenty-eighth Annual Announcement of the Chicago Policlinic presents some very interesting announcements regarding the courses that are given at that institution. We earnestly recommend that our readers address a card to Dr. M. L. Harris, the Secretary, 219 West Chicago Avenue and request him to send you a copy of this announcement. The school has a commendable reputation for its efficient teaching faculty and extended clinic facilities.

As is noted in the minutes of the Council the date for the Annual Meeting of the State Society at Houghton has been selected as August 16th and 17th. The Tranportation Committee appointed by the Council will arrange for a boat trip to Houghton.

Dr. A. F. Kingsley of Battle Creek, Secretary of the Calhoun County Society, has been suffering from inflammatory rheumatism for several weeks. His condition has, however, so far improved as to enable him to be out and around again.

Upon charges preferred by the Secretary of the State Board of Registration in Medicine, Burton E. Manchester, who has operated in Kalamazoo in connection with the United Doctors outfit has been held to the Circuit Court for trial.

The appointment of Dr. F. C. Warnshuis of Grand Rapids as Chief Surgeon of the Pere Marquette Railway system was announced by company officials during the later part of January.

Olaf J. Lofquist, a chiropractor, Grand Rapids, was convicted in the Superior Court, January 13, 1916, of holding himself out as a registered physician,through an advertisement in a newspaper.

J. Alton Watson was convicted in the Superior Court, Grand Rapids, January 14, 1916, of holding himself out as a "Neuropath" and in connection therewith attempting to diagnose and treat diseases by manipulation and massage.

The Coroners Jury in Big Rapids brought in a verdict that Dr. L. S. Griswold came to his death by natural causes.

The new U. B. A. Hospital in Grand Rapids will be ready to receive patients on or about March 1st.

Dr. Roscoe Leland of Kalamazoo was operated on for appendicitis on Jan. 6th.

Dr. S. T. Bell of Alpena has been elected County Physician.

The movement is well under way to establish a local hospital in Hastings.

Dr. Thomas H. Cooper of Port Huron has been elected as County Physician.

Dr. J. O. Bates of Muskegon has located in Reed City.

Dr. A. H. Boon of Painesdale has enlisted in the medical service of the Canadian army

Dr. D. A. Cameron of Alpena has donated a motor ambulance to the McRae Hospital of that city.

Dr. H. C. Ritchie of Battle Creek is reported as being seriously ill.

County Society News

ALPENA COUNTY

At our last meeting in December we elected the following officers for the year 1916:

President—Dr. F. J. McDaniels.

Vice President—J. Purdy.

Secretary and Treasurer—O. Bertram.

O. Bertram, Secretary.

BRANCH COUNTY

The annual meeting, and third annual banquet of the Branch County Medical Society, was held in the parlors of the Presbyterian Church, in Coldwater, on Tuesday, January 25, 1916.

The meeting was called to order by Dr. Samuel Schultz, the President, when the following officers for the ensuing year were elected.

President—Dr. D. H. Wood, Coldwater.
Vice-President—Dr. M. H. Coan, Union City.
Secretary-Treas.—Dr. W. H. Baldwin, Coldwater.
Member Medical Legal Committee—Dr. S. Schultz, Coldwater.
Delegate to State Association—Dr. S. Schultz, Coldwater.

It was voted that one-half the railroad and hotel expense of the delegate to the State Association be borne by the Society.

After the business meeting, an elaborate banquet was served by a committee from the Presbyterian Sisterhood, to the physicians and their wives. The presence of the ladies was a new innovation, as this was their first appearance at any of the Society's banquets, but the jolly good time, and universal satisfaction, insures that the innovation will be a permanent feature.

After the banquet, the following program was carried out: Dr. Schultz, the retiring President, introduced Dr. F. W. Stewart as toastmaster. Dr. Schultz' introduction was preceded by some very candid remarks, containing advice gained from his year in the executive chair, and were heartily received. Dr. Stewart filled the position of toastmaster in a very happy and creditable manner, and the following toasts were responded to: "The Branch County Medical Society," by D. H. Wood. Dr. Wood gave an historical sketch of medical organization in Branch County, from its beginning in the forties to the present time, in which he brought out the names of the early practitioners, including the first ones to settle and practice the profession here, dating back in the early thirties. Dr. Wood's toast was a valuable historical document, and it was ordered inscribed on the records of the Society for future reference.

Dr. A. G. Holbrook spoke on the "Profession of Good Fellowship," Dr. W. H. Baldwin on "The Benefits of Organization," and Dr. R. W. Ridge on "Professional Ethics." The remarks of these gentlemen abounded in wit, story, and wisdom. Miss Beatrice Stewart, daughter of Dr. F. W. Stewart, sang two beautiful solos, and thus ended the most successful year in the history of medical organization in Branch County.

The annual picnic, held in July, was attended by nearly every physician in Branch County, and their families, also by several from surrounding counties, and was a huge success.

There has been held during the year, two social meetings with literary programs, and two with scientific programs, all well attended. The Branch County Medical Society is "alive and well."

W. H. BALDWIN, Secretary.

EATON COUNTY

The Eaton County Medical Society held their fifth regular meeting at Charlotte. A good attendance was present.

The following officers were elected for the ensuing year, 1916.

President—A. H. Burleson, Olivet.
Vice President—Wilson Canfield, Eaton Rapids.
Secretary-Treasurer—G. M. Byington, Charlotte.
Delegate—P. H. Quick, Olivet.
Alternate Delegate—Walter Taylor, Potterville.
Member Med. Leg. Com.—A. W. Adams, Bellevue.

Scientific program as follows:

"Symposium of Pneumonia."
Etiology, Dr. Quick
Drs. Schlitz and McLaughlin.
Symptoms, Dr. Peacock.
Drs. Sassaman and Adams.
Vaccine Treatment. Dr. Stimson.
Drs. Byington and Taylor.
Dietetics, Dr. Knight.
Drs. Sackett and Newark.
Medical Treatment, Dr. Huber.
Drs. Rickerd, Moyer and Sheets.
Surgical Treatment, Dr. Blanchard.
Drs. Rockwell and Burleson.

G. M. BYINGTON, Secretary.

GRATIOT COUNTY

The first monthly meeting of the Gratiot-Isabella-Clare County Medical Society was held, but owing to the epidemic of grippe the doctors were so busy, the attendance was small, seven members and two visitors being present. The papers were all excellent and were worthy of a larger number of listeners. Those who were present appreciated them very much.

E. M. HIGHFIELD, Secretary.

HURON COUNTY

At a meeting of the Huron County Medical Society held in Bad Axe, Oct. 22, 1915 the following officers were elected for the ensuing year.

President—C. W. Armitage, Harbor Beach.
Vice-President—Chas. Morden, Bad Axe.
Secretary-Treasurer—S. B. Young. Caseville.
Delegate—S. B. Young, Caseville.

S. B. YOUNG, Secretary.

KENT COUNTY

At the Thirteenth Annual Meeting of the Kent County Medical Society, held in Grand Rapids December 8, 1915, the following officers were elected for 1916:

President—Dr. J. D. Brook, of Grandville.

Vice President—Dr. T. D. Gordon.

Secretary-Treasurer—Dr. Frank C. Kinsey.

Assistant Secretary-Treas.—Dr. W. A. Hyland.

Delegates to the State Meeting—Drs. F. J. Lee, A. J. Baker and H. W. Dingman.

Alternates—Drs. L. A. Roller, H. J. Pyle and C. C. Slemons.

Defense League Representative—Dr. G. L. McBride.

The first meeting of the new year, on January 12, was given over to the discussion of "The Free Clinic Problem," debating its advantages and disadvantages. About fifteen members participated in the discussion, which was about evenly divided, and the matter was finally left to a committee of five for investigation and recommendation.

Frank C. Kinsey, Secretary.

LAPEER COUNTY

At the last meeting of the Lapeer County Medical Society held in Lapeer, the following officers were elected for the coming year:

President—Adam Price, Almont.

Vice-President—Wm. Blake, Lapeer.

Secretary-Treasurer—J. H. Douglass, Lapeer.

Alternate to State Society Meeting—D. J. Obrien, Lapeer.

Any further communications regarding the County Society will be sent to Dr. J. H. Douglass, Drawer "A," Lapeer, Mich.

J. H. Douglass, Secretary.

LENAWEE COUNTY

The regular monthly meetings of the Lenawee County Medical Society was held in Adrian, Dec. 14, 1915. The following officers were elected for the coming year:

President—Dr. Howland.

Vice President—Dr. W. S. Mackenzie.

Secretary and Treasurer—Dr. Leo Stafford.

Delegate—Dr. George Lochner.

Alternate to State Society—Dr. L. G. North, representative of the Medico-Legal.

W. S. Mackenzie, Secretary.

MASON COUNTY

The "Pulmonator" was brought into use Tuesday evening December 21 and the Mason County Medical Society was started off on another year's work after having been dead for over a year.

Dr. J. C. Brotherhood of the Clinical Laboratory of Grand Rapids met with several of the Mason County fraternity at Scottville on the above date and gave us a treat in the way of a paper on laboratory diagnosis after which a short business session was held and the following officers elected.

President—Dr. G. O. Switzer, Ludington.

Vice-President—Dr. S. W. Spencer, Freesoil.

Secretary-Treasurer—Dr. W. C. Martin, Scottville.

W. C. Martin, Secretary.

MENOMINEE COUNTY

The Annual Social session of the Meniminee, Mich. and Marinette, Wis. County Medical Societies consisted in a banquet given by the retiring Presidents, Dr. Stephen C. Mason and Dr. Eugene Axtell, at the Hotel Menominee, Wednesday, Dec. 8, and was a great success. It was our good fortune to have present two Presidents of State Societies, Dr. T. J. Redelings of the Wisconsin and Dr. A. W. Hornbogen of the Michigan Society.

Toastmaster H. A. Vennema had charge of the following post prandial program:

Dr. S. C. Mason—The Menominee County Society.

Mrs. Wm. Boren—The Doctor.

Miss Louise Madden—Vocal solo, which deserved the reception it received.

Dr. B. T. Phillips—The Ladies.

Dr. Eugene Axtell—Our Mistakes.

One of the hits of the program was a reading, The Doctor's Wife, by Mrs. H. A. Vennema who had a telephone beside her plate and recalled to the Doctor's wives present many interruptions they had experienced. It was so good it is submitted with this report. (See Editorial Comments).

Mr. Walter Nohlechek gave a delightful Violin Solo and responded to the demand for more.

Dr. A. W. Hornbogen—A Message from the State Society.

Dr. M. D. Bird—Hospitals.

Mrs. W. R. Hicks closed the program with an interesting prophecy, The Menominee and Marinette Medical Societies in 1950.

At the business meeting of the Menominee Society the following officers were elected for 1916:

President—Dr. Benj. T. Phillips.

Vice President—Dr. Stephen C. Mason.

Secretary and Treasurer—Dr. C. R. Elwood.

Censor—Dr. Edward Sawbridge.

Delegate to State Society—Dr. S. C. Mason.

Alternate—Dr. C. R. Elwood.

MUSKEGON-OCEANA COUNTY

At the annual meeting of the Muskegon-Oceana County Medical Society the following officers were elected:

President—Dr. I. M. J. Hotvedt.

Vice-President—J. H. Nicholson, Hart.

Secretary—Dr. C. J. Bloom.

Treasurer—L. N. Eames.

Delegate—V. A Chapman.

Alternate—F. W. Garber.

Directors—Drs. J. VanderLaan, J. Oosting, F. W. Garber.

Medico-Legal Committee—Dr. F. B. Marshall.

C. J. BLOOM, Secretary.

ST. CLAIR COUNTY

Regular meeting of the St. Clair County Medical Society was held Thursday evening Jan. 6 in the Elks Club where the members enjoyed a chicken supper after which Dr. Manton of Detroit read a very interesting paper on "Systocia." The discussion was also very instructive. A vote of thanks was given Dr. Manton.

Dr. Callery presented a very interesting specimen of a tumor of the cerebelum.

Dr. T. H. Cooper has been appointed county physician to succeed Dr. Hanson of Port Huron.

The next meeting will be held in St. Clair, Mich., Jan. 20, 1916.

Book Reviews

AN INTRODUCTION TO BACTERIOLOGY FOR NURSES. By Harry W. Carey, A.B., M.D. F. A. Davis Co., Philadelphia. Cloth, 144 pp. Price $1.00.

A useful and instructive guide for nurses. An aid to lecturers in Training Schools.

LABORATORY METHODS WITH SPECIAL REFERENCE TO THE NEEDS OF THE GENERAL PRACTITIONER. By B. G. R. and E. G. C. Williams, M.D. Introduction by V. C. Vaughan, Sr., M.D. Third Edition, illustrated. Price $2.50. C. V. Mosby Co., St. Louis, Mo.

True to its title and revised to date this book is a most useful hand book.

DISEASES OF THE SKIN. By Henry Hazen, A.B., M.D., Professor of Dermatology, Georgetown University and Howard University. Cloth, 527 pp., 223 illustrations, four colored plates. C. V. Mosby Company, St. Louis.

An excellent practical work for the student and general practitioner. Essential facts are imparted. Reference to it enables one to speedily ascertain information that is helpful in the diagnosis and treatment of the commoner skin lesions that present themselves to the doctor in general practice. Voluminous discussions and theories are purposely omitted. It is bound to be welcomed by the busy man and is reliable in every detail.

MEDICAL AND VETERINARY ENTOMOLOGY. A text book for use in schools and colleges as well as a hand book for use of physicians, veterinarians and public health officials. By William B. Herms, Associate Professor of Parasitology, University of California. Cloth 393 pages. Price $4.00. The Macmillan Company, New York.

This is a most informative work. It contains excellent descriptions of the more important diseases and irritations of man and domesticated animals in which insects and arachruds are concerned, either as carriers or causative organisms. The student and progressive physician will find in it much that is helpful and instructive.

BONE GRAFT SURGERY. By Fred H. Albee, M.D., F.A.C.S., Professor of Orthopedic Surgery at the New York Post-Graduate Medical School and the University of Vermont. Octavo volume of 417 pages with 322 illustrations, 3 of them in colors. Philadelphia and London: W. B. Saunders Company, 1915. Cloth $6.00 net; Half Morocco $7.50 net.

Those of our readers who had the pleasure of hearing Dr. Albee at our last annual meeting will welcome the appearance of his work. In it is contained his own technic and the practical application of bone-graft surgery. The success of bone surgery depends upon the technic employed and the after care that is rendered. No other text contains the complete description of this work. It is written in a clear style and enhanced with ample illustrations. Certainly every surgeon will eagerly peruse its contents and frequently refer to it. If you are desirous of a better understanding of bone-graft surgery we sincerely recommend the study of this text written by a pioneer in this special field.

POST-MORTEM EXAMINATIONS. By William S. Wadsworth, M.D., Coroner's Physician of Philadelphia. Octavo volume of 598 pages with 304 original illustrations. Philadelphia and London: W. B. Saunders Company. 1915. Cloth, $6.00 net; Half-Morocco $7.50 net.

The author's sixteen years of experience in performing autopsies is vividly revealed in the entire text. There is thoroughly described a complete, dependable technic for performing a post mortem and the proper interpretation of the findings. If we are desirous of causing our post mortems to reveal true conditions it becomes essential to read and re-read this text. Without a familiarity with its teachings one cannot hope to interprete the findings revealed during an autopsy.

The work should find its way into the hands of every coroner, coroner's physician, pathologist, doctor and expert medical witness. It is a most instructive edition bound to be met with cordial reception. It is due to exert an elevating influence upon the work done in autopsy examinations and investigations.

PRACTICAL CYSTOSCOPY AND THE DIAGNOSIS OF SURGICAL DISEASES OF THE KIDNEYS AND URINARY BLADDER. By Paul M. Pilcher, M.D., Consulting Surgeon to the Eastern Long Island Hospital. Second Edition Thoroughly Revised and Enlarged. Octavo of 504 pages, with 299 illustrations, 29 in colors. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, $6.00 net; Half Morocco $7.50.

The author has presented to the profession a second, revised edition of a most practical work. The importance of cystoscopic examination is so firmly established that physician and surgeon must

be conversant with its technic and interpretation. This volume will be of material aid in arriving at a practical understanding. Profusely and clearly illustrated, a descriptive text of unusual clarity and definite statements the volume combines the essentials of a text and reference work. Dr. Pilcher has introduced into this work all the most important advances in the subject. It is authoritative and practical.

AMERICAN ILLUSTRATED MEDICAL DICTIONARY (DORLAND). A new and complete dictionary of terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Veterinary Science, Nursing, Biology, and kindred branches; with new and elaborate tables. Eighth Revised Edition. Edited by W. A. Newman Dorland, M.D. Large octavo of 1135 pages, with 331 illustrations, 119 in colors. Containing over 1,500 more terms than the previous edition. Philadelphia and London: W. B. Saunders Company, 1915. Flexible Leather, $4.50 net; thumb index, $5.00 net.

The eighth edition of this text book has been carefully and thoroughly revised and many new plates added. Several hundred new terms have been defined and a text matter has been increased by thirty pages. A number of new tests have been inserted.

The progressive physician or surgeon needs a Dorland dictionary at his elbow. It is his most important reference volume. Without a Dorland one is seriously hampered in the effort to keep abreast. In our editorial work we refer to this volume daily.

We commend this new master work to every reader and student.

Miscellany

SOME NEW IODINE PREPARATIONS.

It is not too much to say that in recent years iodine has become an indispensable agent in skin and wound disinfection, and this in spite of the fact that the tincture of iodine commonly used for this purpose has a number of manifest disadvantages. To mention a few of these—it is decidedly irritating, only slightly penetrating, produces disagreeable stains and discolors or injures instruments.

For these reasons the introduction of a new iodine preparation that not only obviates these objectionable features, but possesses many desirable qualities of its own, will be of general interest. This preparation, known as Iocamfen, is based on the iodine solvent action of the liquid trituration product of camphor and phenol under suitable conditions and contains 10 per cent. free iodine. Comparative tests of preparations of this character and tincture of iodine in many field and base hospitals, during the present European war, have conclusively demonstrated its superior disinfecting power due to its greater penetrating ability and its greater freedom from irritation.

Iocamfen Ointment, containing 5 per cent. free iodine, will also be found to be much more efficient as well as agreeable than the ointment of iodine of the U. S. P. or its substitutes. Microscopical examinations show that in the official and other ointments of iodine on the market the iodine is not perfectly incorporated in the base, while in Iocamfen ointment the iodine content is in a state of perfect solution. This fact alone explains why this new iodine ointment possesses such marked penetrating power. Moreover, its other constituents, camphor and phenol, increase its disinfectant action and render it distinctly analgesic.

The therapeutic indications of these products comprise all conditions in which the tincture or ointments of iodine are employed, such as disinfection of the skin and operative field, treatment of wounds, infective processes, burns, fistulas, ulcers, abscesses, parasitic affections of the skin, furuncles, glandular enlargements, rheumatic and gouty affections, etc.

We would urge our readers to send for literature on these new and very important iodine preparations to Schering & Glatz, 150 Maiden Lane, New York City, who manufacture them in the U. S. A.

Freckle and Beauty Lotions.—The worthlessness and, in many instances, the dangerous character of nostrums sold as freckle removers and beautifying preparations are indicated by the following analyses, taken from the reports of various state chemists: Hill's Freckle Lotion was found to be a 1.84 per cent. solution of corrosive mercuric chloride. Kingsbery's Freckle Lotion was found to be a solution of corrosive mercuric chloride containing 5.3 parts in 1000. Kulux Compound, a "prescription fake" freckle and tan remover, was found to contain zinc oxide, bismuth subcarbonate, glycerine and water. Mrs. McCorrison's Famous Diamond Lotion No. 1, said to remove moths, freckles, pimples, etc. was found to be essentially a solution 28.2 parts of corrosive mercuric chloride in 1000 of water. Neroxin, a "prescription fake" said to remove blackheads, was found to contain borax 55 per cent. and "soda" 25 per cent. Othine, sold as a freckle remover, is reported to contain bismuth subnitrate and ammoniated mercury with a fatty base. Perry's Moth and Freckle Lotion Compound was found to be a 16 in 1000 solution of corrosive mercuric chloride containing in addition a small amount of a lead salt. Pyroxin, sold on the "prescription fake" plan as an eyebrow and eyelash grower, was found to be perfumed vaseline. Rose-Kayloin, advertised in fake health department of some newspapers, was found to contain 80 per cent. sulphate and 15 per cent. potassium carbonate. Mme. Rupert's Face Bleach is reported to be a 4 in 1000 alcoholic solution

of corrosive mercuric chloride, containing a small amount of benzoin. Stillman's Freckle Cream was found to be an ammoniated mercury paste. Tan-A-Zin, a complexion beautifier, was found to have for its essential ingredient ammoniated mercury. Sarah Thompson's "Wrinkle Lotion" was found to contain alum 7 per cent., glycerine 29 per cent. and water 64 per cent. Zintone, said to produce a faultless complexion quickly, is reported to contain borax 23 per cent., stearic acid and soap 77 per cent. Though the external use of mercury salts is fraught with danger, the nostrums above shown to contain such poisonous ingredients are sold with the claim that they are practically harmless (*Jour. A.M.A.*, Nov. 20, 1915, p. 1835 and Nov. 27, 1915, p. 1933).

Elixir Iodo-Bromide of Calcium Comp.—The Tilden Co., New Lebanon, N. Y. and St. Louis, Mo., sells "Elixir Iodo-Bromide of Calcium Comp without Mercury" and "Elixir Iodo-Bromide of Calcium Comp." with Mercury." The latter is said to contain, in addition to the ingredients of the former, 1/100 gr. mercuric chloride in each fluidram. The "formula" of the elixir without mercury is stated to be: "Salts of Iodine, Bromine, Potassium, Sodium, Calcium, Magnesium with Stillingia, Sarsaparilla, Rumex, Dulcamara, Lappa, Taxaxacum, Menisperum." Advertising circulars give "formulas" which differ somewhat from the preceding. None of the "formulas" gives the quantities of all of the several constituents. The Tilden Company asks physicians to depend on these preparations in the treatment of syphilis. While it seems incredible that any physician would jeopardize the health—even the life—of a patient by accepting this advice, the fact that certain medical journals advertise these preparations with the caption "The Conquest of Syphilis" made it incumbent on the Council on Pharmacy and Chemistry to record its condemnation of the employment of these unscientific, semisecret mixtures (*Jour. A.M.A.*, Nov. 6, 1915, p. 1662).

Laxative Bromo Quinine.—From the analysis of the A.M.A. Chemical Laboratory it appears that each tablet of Laxative Bromo Quinine contains, as essential ingredients, phenacetin about 2 grs., caffein 1/5 gr., quinine or cinchona alkaloids 2/5 gr. and aloin or aloes. While the name gives the impression that bromine and quinine are the most important ingredients, the bromide content corresponds only to 1/500 part of a pharmacopoeial dose of potassium bromide. In order to get a pharmacopoeial dose of quinine, it would be necessary to take ten Laxative Bromide Quinine Tablets. If this were done, the person would get twenty grains phenacetin, a dangerously poisonous dose. As phenacetin is the essential ingredient of Laxative Bromo Quinine it is evident that this widely exploited nostrum is misbranded (*Jour. A.M.A.*, Nov. 27, 1915, p. 1932).

Iodeol and Iodagol.—Both appear to be iodine preparations. They are advertised as "Electro-Chemical Colloidal Iodine." Iodeol is recommended as "Iodine with all its potentialities—stripped of all its drawbacks—non-irritating, non-caustic, non-toxic, non-cumulative, injectable without pain." No adequate evidence is offered in support of the therapeutic claims made for Iodeol and Iodagol, although the assertions as to the action of Iodeol in tuberculosis and pneumonia, in particular are susceptible of test by laboratory and animal investigation (*Jour. A.M.A.*, Nov. 27, 1915, p. 1935).

Varlex Compound.—This is an alleged cure of the liquor and tobacco habit of the "prescription fake" variety. Advertisements advise the secret administration of: Water 3 ounces, muriate of ammonia 20 grains, Varlex Compound one package, pepsin 10 grains. The A.M.A. Chemical Laboratory reports that Varlex Compound consisted of approximately 97 per cent. milk sugar and 3 per cent. moisture (*Jour. A.M.A.*, Nov. 6, 1915, p. 1663).

Alkalol.—Analysis in the A.M.A. Chemical Laboratory indicated Alkalol, which is advertised as useful in inflammations of the nose and throat, to be essentially an aromatized, weakly alkaline, saline solution containing a small amount of chlorate, probably potassium chlorate; it yielded about 2 per cent. of solids, mainly alkali chlorid, chlorate and bicarbonate of this 2 per cent. about one-half was bicarbonate (*Jour. A.M.A.*, Nov. 6, 1915, p. 1665).

Dr. Charles Flesh Food.—This is an ointment sold under such claims as "Applied to the skin nourishes by absorption" and "it builds firm, healthy flesh." It is also said to be an efficient bust developer. Analysis in the A.M.A. Chemical Laboratory indicated the following: starch 38.5 per cent., petrolatum 51.0 per cent., zinc oxids 2.0 per cent., impure stearic acid 1.5 per cent., perfume, coloring matter (*Jour. A.M.A.*, Nov. 13, 1915, p. 1747).

Intesti-Fermin.—"May we count on your assistance" ingeniously inquires the Berlin Laboratory, Ltd., in an advertisement appearing in a medical journal, and with cool effrontery continues "We are telling the layman about Intesti-Fermin. * * * May we count on your assistance in spreading this message to everyone * * * ?" May they? (*Jour. A.M.A.*, Nov. 13, 1915, p. 1736).

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SOME POINTS IN THE TREATMENT OF HYPERTENSION.

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It is necessary to differentiate between transitory and permanent hypertension; the former may arise from a variety of causes as increased intracranial pressure and eclampsia. The nature of the exciting cause of increased blood pressure in eclampsia has not been determined, and is most interesting from its transitory character. Permanent high blood pressure is most frequently a manifestation of kidney involvement, and it is possible that time will show that practically all cases of permanent hypertension are of renal origin. It is true that only about 60 per cent. of patients with blood pressure of 160 millimeters or more show chemical or microscopical evidence of nephritis, the higher the blood pressure the more constantly we find albumin and casts in the urine. Negative urinary findings do not, however, exclude the presence of marked renal involvement, as determined from the observations of many pathologists.

On account of the great frequency of kidney disturbance in this group of cases, the general principles of treatment are directed toward lessening the amount of waste to be eliminated through the kidney by reducing the quantity of protein foods and increasing elimination through the skin and bowel. It is not necessary in these patients to eliminate animal protein from the diet. Its restriction to about six or eight ounces daily is, however, at present considered advisable. Whether this be light or dark meat is of no significance. The elimination through the skin should be maintained by the use of sweats, usually two or three a week being sufficient. The method employed to bring about sweating is of little importance, the comfort of the patient being the first consideration. The bowels should be kept free—not carrying it to the point where the patient is weakened, and the nature of the agent employed may be left to the pleasure of the patient. Where edema has developed restriction of sodium chloride and the use of diuretics may be of value. On account of the increased work thrown upon the heart as a result of the hypertension all form of over exertion should be avoided. Measures which might transitorily raise the blood pressure should be guarded against and this phase of the subject will be specially discussed. Before proceeding it might be said that any line of treatment now in use has only at most a moderate effect on chronic hypertension, although with patience and great care apparently in a certain limited number of cases the pressure may be brought to a lower level, where it may remain for long periods of time. Most important is the education of the patient so that he can live comfortably in spite of his high pressure. Returning to the question of agents thought to affect blood pressure the following may be specially considered:

Tobacco.—Nicotine when injected into an animal causes a very sudden and marked rise in blood pressure. It has also been shown that one-twelfth to two-thirds of the nicotine in a cigar may be inhaled in the smoke. The former view that nicotine was destroyed by the heat has been disproven. It has also been shown that nicotine is the only pressor substance in tobacco. As nicotine can be absorbed through the unbroken skin it is possible that the nicotine in tobacco smoke might raise blood pressure. Lee has studied very carefully the effect of smoking upon the blood pressure. When a novice smokes there is a prompt rise in blood pressure of 10 to 20 millimeters. This continues for a short time, then falls to below normal and the smoker begins to feel uncomfortable. The moderate smoker reacts by a moderate rise in pressure, rarely exceeding 10 millimeters—this remaining during the period of smoking, then quite rapidly returning to the normal level. The excessive smoker, however, shows little if any rise in pressure. With the

moderate smoker the more prolonged the period of smoking the higher the blood pressure, the pressure being higher after smoking two cigars than after smoking one. Lee has also shown that the more rapid the combustion, the less the amount of nicotine passing through in the smoke. Thus cigarettes or a slender cigar would give the smoker less nicotine than the same amount of tobacco in a thick cigar.

Coffee.—It has generally been considered that coffee increases temporarily the blood pressure. As caffein is the only pressor substance present in coffee the question resolves itself into the effect of caffein on blood pressure. An average cup of coffee contains from two to three grains of caffein. The older writers believed caffein was a powerful vasoconstrictor. The recent work of Sollman and Pitcher has shown that the peripheral vaso-depressor effect of caffein outweighs its stimulating action upon the vasomotor center and for this reason caffein lowers rather than raises blood pressure. This does not mean, however, that coffee may not be objectionable in certain persons with high blood pressure, especially nervous individuals where coffee interferes with sleep and increases the nervous tension and thus may raise blood pressure.

Nervous strain or worry may have a very decided effect on blood pressure. Gaertner demonstrated a rise in pressure of 10 to 20 millimeters in boys before an examination. Zabel reports a case, where when the patient (a neurasthenic) would discuss his symptoms the pressure would rise from 110 to 170 millimeters, and Hewlett describes a case of the same character where the pressure rose from 130 to 170 millimeters. The writer has seen a case, where the patient's blood pressure recorded several times during a period of two years did not exceed 140 millimeters, rise to 190 millimeters after being told she had a carcinoma of the uterus. This remained at this high level for two weeks, or until after an operation when she had been assured recurrence was improbable. We should infer from this that the patient with hypertension should lead a life as free from worry as possible.

Physical exertion also raises blood pressure. Oertel in eight cases after mountain climbing found an increase in pressure in all, the maximum being 43 millimeters. Huertle reports after beginning severe exertion a rise in blood pressure of 30 to 40 millimeters. Such an increase in pressure in a patient with hypertension might lead to serious consequences by overstraining the heart or rupture of a cerebral artery.

Heat and cold. Warm baths (99 to 101° F.) lower blood pressure by causing primary vascular dilatation. Hot baths (104 to 106° F.) produce a rise in pressure. While the vessels are dilated the stimulation of the heart more than outweighs this so that ultimate result is an increased pressure. Cold baths raise pressure materially on account of their vasoconstrictor effect. The effect on pressure is especially marked if the patient is placed under a cold shower immediately after a hot bath or sweat. In one of the writer's patients such a procedure caused a rise in pressure of 40 millimeters. The patient must be warned of the dangers of such a procedure. A severe chill also has a very marked pressor effect. In a patient observed by the writer, where the pressure just previous to the chill was 90 millimeters, during the chill it rose to 150 millimeters.

Altitude. Passing to a high altitude lowers blood pressure. Schneider and Hedblom observed an average fall in both systolic and diastolic pressure of 7 millimeters after passing from an altitude of 1700 to 14,000 feet. It is not to be inferred from this that patients with hypertension can safely go to very high altitudes. Many of these patients have impaired heart muscle, and in high altitudes may suffer serious consequences from imperfect aeration of the blood.

Cyanosis raises blood pressure, and in many cases the increased blood pressure in broken compensation is due to the associated cyanosis. Osler reports a case of pulmonary edema with cyanosis where the blood pressure was raised 90 millimeters. Digitalis under these circumstances as shown by Sahli lowers blood pressure by improving the pulmonary circulation. It has been shown by Cushney and others that digitalis administered by mouth does not increase blood pressure. For this reason, where cardiac decompensation is associated with hypertension, digitalis may be safely employed.

Constipation. Abelous was first to describe a pressor substance in putrid meat. Later Rosenheim and Barger and Walpole have verified these results. This point is of practical significance, as it is reasonable to believe if substances raising blood pressure can be formed in the test tube by the action of bacteria upon meat, the same thing may occur in the intestinal tract. These substances belong to the amins. Their effect upon blood pressure resembles closely supra renal extract, differing, however, by raising blood pressure when ad-

ministered by mouth. In man one-sixth of a grain of this substance caused a rise in pressure of 33 millimeters and one and one-fourth hours later the pressure was still 15 millimeters above normal. While the actual importance of these substances in effecting blood pressure has not been determined, it is wise with our present knowledge to maintain free elimination through the bowel.

Fluid intake. VanNoorden has taught that in patients with hypertension restriction of fluids should be practiced, as the taking of large amounts of fluid might raise blood pressure. The literature does not furnish any evidence that excessive water drinking raises blood pressure. Rieder and Maximowitch have shown that one quart of beer when drunk within three to five minutes will cause within fifteen to twenty minutes a raise in blood pressure of 20 millimeters; return to normal taking place in forty-five minutes. It is very probable this is due to the alcoholic rather than fluid content, as this is the curve to be expected from taking moderate amounts of alcohol. Inasmuch as in animals transfusion with normal salt solution may be carried to the point where an amount equal to 25 per cent. of the body weight has been introduced without materially affecting blood pressure, it is scarcely probable that in man the taking of any amount of fluid by mouth would raise blood pressure.

Vasodilator drugs are less frequently used at present than formerly in the treatment of hypertension. This is due largely to the very transitory duration of their action, and that they are merely palliative. Sodium nitrite is probably the most satisfactory drug of this group, the fall in pressure is gradual and the effect quite prolonged, and free from the headaches so frequently observed with erythrol tetranitrate and at times with nitroglycerin. There is no evidence to show that the iodides have any effect on blood pressure. Drug therapy in hypertension should always be secondary to good elimination and the necessary restriction of physical and mental activity.

QUARRIES IN THE URINARY TRACT.

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The rapid kaleidoscopic changes, through which the medical and surgical departments are passing, due in the greater part to perfection and harnessing of modern electric currents, whereby simple yet wonderfully perfect instruments of precision, as the bronchoscope, proctoscope, cystoscope, and roentgenoscope are placed at our command. The possibilities and practicabilities of these, though still in infancy, are as yet recognized by too few of the profession at large.

The human economy still entertains too many dark and unexplored cavities, which by perseverance can be as successfully lighted up as those of the genito-urinary tract. Such persistent effort by the few workers is forcibly exemplified in the extensive, accurate, elaborated and compiled data of this system of co-related organs, through the use of the cystoscope, ureteral catheter in conjunction with Roentgen ray. There is no excuse in these days for patients carrying quarries in their kidneys, ureters or bladder for exact diagnosis can be made in practically 98 per cent. of cases. Therefore it behooves the general profession who are first consulted and see these patients in early stages of disease to look well and carefully into all cases complaining of symptoms referable to the genito-urinary tract.

In reviewing the findings of some 1500 cystoscopic examinations one is impressed with the vast difference in kidney efficiency and degeneration due to presence of stone in the tract whether recognized early or late. The etiology of calculi still remains somewhat obscure, though several plausible theories have been promulgated. E. 9.

(A) Changes in the lining of the canal, whereby slight inflammatory processes in mucosa, presenting altered surfaces to the chemical constituents of urine under susceptible deposition thereon.

(B) Changes in urine due either to bacterial or chemical influences whereby the carrying medium is altered allowing the crystals and colloids to precipitate and accumulate.

(C) Presence of foreign bodies in tract as —fractured rib—spicules; bacterial clumps, pencils, pins, gum, catheter, sutures, etc.

Stones occur in all walks of life and through all ages though apparently most prevalent between the ages of 20 and 50 years. They vary greatly in size, shape and number, from single calculi weighing three grains to several pounds and in number from one to several hundred. The marked anatomical changes incited by stone vary depending on: (1) Location. (2) Size, shape, position and number, plus bacterial involvement.

In all cases sooner or later they produce changes in organs varying from simple irritation and congestion to ulceration, degeneration

and destruction of functionating parenchyma, with added danger of super imposed microbic infection. The paramount symptoms which cause patients to consult the general practitioner being pain, hemorrhage, irritability and pyuria.

Now in a given case presenting himself to you for diagnosis giving a history of lumbar or vague abdominal pain, more or less constant and which may vary from dull ache to severe spasmodic attacks radiating downward to bladder and thighs, with or without irritability of the bladder or hemorrhage, therefore calls for a complete and thorough examination of the genito-urinary tract by the cystoscope and Roentgen ray. How shall we proceed in a given case of suspected calculus in kidney, bladder or ureter?

(1) Careful history.

(2) Thorough elimination, preferably castor oil, followed by enema.

(3) Upon a suitable table the field is prepared by simple soap and water.

(4) Anesthetization of parts is accomplished by 2 per cent. solution cocaine in male anter urethra and in female urethra and bladder; (but 2 per cent. novocaine or alypin 4 to 6 grains for male deep urethra and bladder.)

In over 95 per cent of cases local anesthesia for cystoscopy is sufficient.

After carefully examining cystoscope as regards lights it is inserted gently into bladder, which is thoroughly explored noting (1) size, shape of sphincter, trigone and fundus.

The general mucosal covering which appears as pearly gray in normal bladders, and in irritated bladders becomes velvety dull. Blood vessels lose their sharp outline. If calculi are present in the viscus usually found free on floor or attached to walls of bladder so that careful perusal of entire area is necessary.

They present in the illuminated field a most beautiful picture standing out forcibly in bas relief, their surfaces either clean or covered with mucus or blood clot the walls showing changes due to irritability. Stone in the bladder should be recognized in 100 per cent. of the cases, if missed usually done so by carelessness. In suspected cases of ureteral obstruction or calculus we note the condition of the mucosa in immediate vicinity of the ureteral orifices which lie about one inch to right and left of sphincter. They vary in size, shape and position. Under careful observation the orifice is seen as a small slit along outer edge of trigone, emitting successive spurts of urine with swirl-like motion.

The presence of calculi in the ureter is usually manifested by changes in mucosa of orifice that is, the mucous membrane becomes edematous, the musculature contractions usually disturbed so that urine flows out or no depending on whether the ureter is highly occluded, the urine may be clear, cloudy or bloody. The ureteral shadowgraph catheter is inserted and gently passed upward ascertaining any obstruction present and if so, attempting to gently force by. With catheter *in situ* a radiograph which will outline ureter giving shape, position, presence of suspicious shadows, etc. which if present stereoscopic plates to determine relative positions of shadows, should be made. Calculi if not too large or too tightly incarcerated in ureter can be removed in large majority of instances by injection of sterile petroleum oil above, about and below the offending body, thereby loosening the stone and dilating the ureter together with exhibition of diuretics which will force the stone into the bladder and then is usually passed.

I have accomplished this in some ten cases with excellent results. Stone in the kidney will in about 90 per cent. of cases cast a definite shadow on the radiographic plate. The pure urate xanthin and cystin crystal stone, which constitute less than 10 per cent. will cast no shadow as their density is no greater than soft tissues.

The symptoms for which the patients consult for relief being—pain. This may vary from a constant dull ache in lumbar region, on the affected side, to pain on opposite kidney referred to abdominal viscera especially stomach or radiates downward along course of genito crural nerve. At other times pain is excruciatingly spasmodic with severe prostration, pain accentuated on jolting. Hemorrhage may accompany or follow, though in many cases no red blood cells are to be found in urine.

2. Vesical irritability—this varies greatly.

3. Hemorrhage—which may be either occasional or persistent, and of varying amounts.

4. Pyuria—the cloudiness varies with the amount of debris and degenerated tissue.

Suspicious shadows in the vicinity of the kidney can be oriented more accurately by filling the pelvis of the kidney with colargol 10 per cent, through ureteral catheter and again radiographing stereoscopically.

The picture presented through cystoscope in renal calculae is concerned chiefly with the appearance of the ureters. A comparison will show on the affected side, the mucosa infected and edematous increased or in some

cases diminished or absent urinary efflux; urine usually cloudy or tinged with blood.

Of late I have examined both radiographically and with cystoscope a number of patients who gave history of acute excruciating pain in one or both kidneys radiating downward to bladder and thighs. On examination no shadows suggestive of stone were found nor any obstruction or irritability of ureter. All these patients gave histories of former infections primary in other members of body as arm and leg. The urine was carefully examined and no calculi was passed, simply a slight amount of sand.

The complications which frequently result from stone, being infection superimposed on obstructed kidney or ureter. A thorough complete examination of both kidneys is demanded in either uni or bilateral nephrolithiasis. This can only be accurately accomplished by ureteral catheterization with segregation of urines. So that the amount and condition of functionating kidney substance can be estimated by microscopic examination of sediment the phenol-sulpho nephthalein test, and the quantitative urea test. Should the opposite kidney show a very low thalein output below surgical safety it would be useless to subject the patient to surgical intervention for removal of calculus. A great many errors are made by the profession in banking too strongly on the urinary findings. Many think that unless you find blood, pus and debris in the urine, stone can not be present. This is a grave fallacy for we have during the past three months operated on some fifteen cases of stone in the ureter and kidney with little or no urinary findings, for the calculi totally obstructed the lumen so that the ureter was impassable to ureteral catheter.

Obstruction of ureter, whether partial or complete, produces chronic processes in the functionating parenchyma. This varies from slight irritation to complete destruction of parenchyma, due to increased pressure. We have lately encountered a large number of cases where the entire parenchyma was destroyed leaving but a large thin section of pelvis and capsule, this cavity containing from three ounces to two gallons. These really constitute the neglected cases and are usually the result of procrastination. In the great majority of instances this should not occur and if they are thoroughly and carefully examined, these conditions can be ascertained and measures for relief instituted.

To limit the process as far as possible, it is therefore essential that we should give all the care necessary for thorough examination in patients presenting symptoms either directly referable to the genito-urinary tract or who suffer from vague and undeterminable symptoms not directly referable to the gastrointestinal tract in which the diagnosis is uncertain. For this reason the cystoscope and ureteral catheter is at all times indicated.

It, therefore, becomes necessary that we use all means at our command to give our patients the benefit of the modern aids to diagnosis in order to ascertain as early as possible the nature and extent of lesions from which they suffer, so that we may intelligently treat or recommend for treatment measures best suited for their ultimate recovery.

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VACCINES AND SERUMS IN THE TREATMENT OF DISEASES OF THE EYE, EAR, NOSE AND THROAT.

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It may be accepted as axiomatic that the best way to treat pathologic processes in the human body is to approximate, insofar as possible, nature's methods in preventing and curing disease.

One can safely start on the secure ground embodied in the statement that nature has provided the human body with certain barriers against and protections from the ingress of pathologic producing substances into the body, and so long as these barriers are intact and these protections perfect, the body remains in a healthy functionating conditions, as far as infectious diseases are concerned. In other words, there is constantly maintained between the processes of life and the agents of disease and death a nicely balanced "statu-quo" with the balance in favor of the former.

Now disease may be due to, either a reduction of the processes of protection on the one hand or, to an increase in the number or virulence of the agents of disease to such an extent that pathologic processes of various kinds are induced and the symptom complex of so-called disease becomes manifest.

This "statu-quo" with the balance in favor of the protective processes of the body is known as immunity. As long as immunity is established in the body, disease from infectious agents cannot take place, and no infectious pathologic process in the body can be cured

until immunity to the particular infection involved is re-established.

Now what takes place in the human body when this balance is disarranged in favor of the pathologic producing factors is what constitutes nature's methods of cure.

There is an immediate whipping up of the protective forces of the body, the leucocytes are immediately increased in number, neutralizing substances (antibodies) are produced whose business it is to upbuild the defensive processes of the body, provide a stimulus to the activity of the vastly increased number of leucocytes and expel or kill the invaders. When this is brought about, immunity is re-established, the disease is cured.

If the above briefly described process did not take place, every infection must necessarily result in death from the unimpeded propagation of the infectious material within the body. The infectious diseases in which nature is capable of doing this are known as self-limited diseases, and their natural cure is followed by a longer or shorter period in which these same infective substances cannot reproduce their clinical manifestations in the same body. A natural immunity has been established.

The natural stimulus to the protective processes of the body, the increased leucocytes, and the production of antibodies is provided by the products of the original infection which, when they reach the circulation and come in contact with the cells of the body, stimulate the latter to the increase of the leucocytes and the production of the antibodies, which in turn destroy the infection.

What is true of the whole is also true of the part. So *"a-priori"* one can say, without fear of successful contradiction, that diseases of the eye, ear, nose and throat must be influenced in the same way as similar pathologic processes in other parts of the body. Just insofar as infections of the body generally can be influenced by treatment, medicinal or otherwise of any stated type, just so far can similar processes in the eye, ear, nose and throat be benefited, and no farther.

Bold, indeed, would be he who, in the face of the accumulated clinical evidence of the last ten years, could deny the important role played by vaccine and serum therapy in various general pathologic processes, and but little less bold is he who could do a similar thing in estimating the role played by the same agents in the diseases of the special organs under consideration.

Much of the confusion and diametrically opposed statements heard in discussions of this subject are due to a misconception of what is to be reasonably expected from such therapy in the first place, and in the second, from lack of clear views as to which kind of therapy-vaccine or sera- is suitable to an individual case, and in that case can reasonably be expected to attain the best possible results.

Nature, unaided by surgical help, has been found woefully inefficient in successfully combating the results of systemic infections in many instances, and one can easily therefrom deduce the truth that treatment at the hands of the physician, even when founded on a realization of nature's best methods, will frequently encounter failure unless that which nature herself has been unable to overcome can be successfully dealt with by other means.

So we come to the first and greatest of all the statements in the conception of vaccine and serum therapy, viz.: This form of treatment cannot be expected to take the place of surgery, whose function it is to remove the obstruction to recovery from disease which nature is unable to surmount.

The great surgical principles of the establishment of thorough drainage and removal of diseased and dead tissue must first be carried into effect before this or any other method of treatment can reasonably be expected to be successful.

It is futile to expect vaccine or serum therapy to accomplish a cure unless the above mentioned conditions have been fulfilled, and this is the misconception which has given rise to much confusion in rightly estimating the results of these forms of the management of disease.

Now let us have a clear view as to the form of treatment, vaccine or sera, suitable to any individual case, and we will have gone far on the road to an intelligent conception of what is the best form of treatment in any individual case.

A vaccine is a solution holding in suspension germs; these germs may be alive or they may be dead. The former we may dismiss as not entering into the phase of the subject under consideration.

A sera is the already prepared result in the blood serum of an animal which has been subjected to infection from the germs of the particular infection to be treated, and it contains already prepared the antibodies which are so valuable and so much needed by our patient to combat the disease under consideration. In short, a vaccine supplies the stimulus to the

cells of the body to be treated; a sera supplies the neutralizing agents already manufactured. Two very different agents they are, and therefore there must be definite differences in the systemic state of the patients to which they each are most applicable, and it seems clear that the indications of a vaccine are: (1) To establish in a healthy body an immunity to an impending exposure to a given infection. Valuable as a prophylactic against certain infectious diseases—smallpox, typhoid fever—or as a pre-operative measure to establish immunity before an operation is undertaken. (2) In the early stage of an infection accompanied by systemic symptoms such as elevation of pulse and temperature, moderate leucocytosis, valuable in choryza, acute otitis, nasal accessory sinus diseases, tear duct infections. (3) Closed infections—by which is meant infections, localized in the tissues and in which no or very slight systemic evidence of the products of the infection reach the general circulation, are present—no pulse or temperature elevation, no leucocytosis, very important to the ophthalmologist in such conditions as infection of the corneal wound after cataract operation, which is an ideal situation for the use of a vaccine because there is here an infection which will do its very worst work and still not stimulate the natural protective processes of the body, because very little or none of the products of the infection can reach the general circulation—in other words, it is a closed infection and in such a case the prompt and vigorous use of a suitable vaccine will be very hepful.

Gonorrheal conjunctivitis, or in truth any infection of the conjunctiva, offers a fruitful field for the use of a suitable vaccine, one possible exception being diphtheritis conjunctivitis, in which case the well known antidiphtheritic serum will be found more effective because diphtheria here, as elsewhere, is not a closed but a general infection.

The one great contraindication to the use of a vaccine is that state of the system following an infection in which the products of the original infection has already, in large quantities, reached the general circulation and has stimulated the protective processes of the body to the utmost, then it would seem to be foolhardy to throw more dead germs into a circulation already overloaded with nature's product of a similar type and in which they have already done all that can be reasonably expected of them.

In such a eondition the sera are the logical form of treatment, because they contain already manufactured and ready for use the very products which the cells of the infected body are no longer able to produce.

Let me use a familiar example to drive home this thought of the different indications for vaccines or sera.

Acne is a closed infection and vaccines are efficient in its treatment. Diphtheria is an open infection and a serum is the best known and most efficient treatment. In diseases of the eye, ear, nose and throat, this distinction can easily be made.

Some of the situations in which a sera is efficient may be mentioned.

In the eye, gonorrheal irido-cyclitis, in the acute stage anti-gonicoccic serum is the logical remedy. Diphtheritic conjunctivitis also is best treated by a serum.

In the nose and throat—accessory sinus infections accompanied by systemic disturbances.

Post-operative infections whose surgical drainage has been established, and pathologic manifestation still continue.

Ear.—There is one place in otology where a suitable serum is of the greatest value, viz: Where, after all the surgeon can do is done, surgical drainage has been established, all diseased tissues removed, perhaps the sinus opened and jugular vein is tied, and still the recuperative powers of the body seem inefficient in starting the patient on to recovery—a negative phase of great persistency has been established, the protective processes of the body, over-stimulated in the fight with infection, lie dormant, then the right sera will frequently supply temporarily what the body cells cannot produce, and the patient is tided over a crisis which, when once passed, the way is opened to recovery.

THE FUNDAMENTAL PRINCIPLES UNDERLYING THE USE OF THE OBSTETRIC FORCEPS.

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The recent graduate in medicine is supposedly conversant with the fundamental principles underlying the use of the obstetrie forceps, but, unless he be fortunate enough to have access to a large maternity clinic where the technie of the practical application of the forceps in a large number of cases can be had he will, after a few years of general practice, have forgotten some of the finer points in the teaching of his student days. Indeed, it ean hardly be expected

of the general practitioner, who is obliged to use the forceps only occasionally, that he be an expert in their application.

Again—some men have been so fortunate as not to have encountered a difficult case in many years of practice, and consequently become overconfident in their ability to conduct all forceps cases to a successful termination. Sooner or later, however, their lesson comes to them in the shape of an obstinate occiput posterior presentation or contracted pelvis.

On the other hand, there are those of us who are lacking in the necessary knowledge or nerve, and consequently hesitate to use the forceps when we should.

It would seem, therefore, that a half hour devoted to a review of the fundamentals of forceps deliveries would be time well spent, and to that end it is my purpose to take up a discussion of the subject in a simple and practical way.

To begin, then, we may ask, what are the functions of the forceps? The important function, of course, is *Traction.* In utilizing this function we must constantly keep in mind the fact that we have within the grasp of the two blades a small, delicate, compressible structure, the child's head. Traction must not be made unless the womb is contracting or the uterine walls are being compressed against the trunk of the child by an assistant, else too powerful strain may be placed on the cervical portion of the spinal column and injury to the cord result. Traction should not be too long continued because traction is always accompanied by more or less compression and intra-cranial hemorrhage may result. Again, the traction must be exerted in the proper direction, for in the case of a high forceps delivery the necessary depressing of the handles of the instrument may produce considerable injury to the perineum. On the other hand, traction exerted too much in a horizontal direction before the head has entered the pelvis may unnecessarily injure the mother's bladder. Then, too, the operator when exerting traction must do so only with the shoulder and arms, always having his own body in such poise that a sudden slipping of the forceps on the child's head may be appreciated, as it were, before it happens. As the head advances, the handles of the instruments must be raised in such a manner that the head, when it is bulging on the perineum, is lifted out, so to speak, from the sack formed by the distended perineum. It is better practice, however, to remove the forceps when the head is causing a bulging of the perineum, as it can usually be delivered between pains by an upward pressure on the muscular floor of the pelvis in such a manner that the tips of the fingers impinge upon the chin or cheeks of the child, being careful not to press over the orbital regions. Traction can be utilized to the best advantage if the patient is placed on a kitchen table or high firm bed. Neglect of this precaution I am firmly convinced has been productive of much mortality and morbidity to both mother and child. As compression is a necessary accompaniment of traction it cannot be too earnestly born in mind that this function, traction, must be intermittent and not too long continued because of the ever present danger of cerebral hemorrhage which is usually manifested three or four days after the delivery in the form of lethargy and inability to nurse and frequently convulsions.

ROTATION.

This function, when improperly applied, is productive of serious injury to the birth canal, and occasionally to the child's head. In order that it be utilized successfully, it is imperatively necessary that the presentation be accurately determined before applying the forceps. Also, too much force must not be exerted, and care should be taken to keep the tips of the blades as near the centre of the parturient tube as possible—neglect of these precautions will in all probability result in extensive laceration of the vaginal walls.

The intelligent application of the function of rotation is productive of most excellent results, as illustrated in the Scanzoni Manoevre in occiput posterior positions. Very little rotation should be attempted until the head is well down into the pelvic cavity and bulging the perineum.

COMPRESSION.

It is not intended that compression (other than is just sufficient to keep the forceps from slipping), should be used. The dire results of ill-advised use of this function is well illustrated in the distorted features and disfigured head of the child delivered through a contracted pelvis. Compression, therefore, can hardly be called a function of the forceps, being merely a necessary accompaniment of traction. Indeed, it may be said these three functions, traction, rotation, and compression, are carried on simultaneously, as it would be well nigh impossible to advance the head by traction if it were not accompanied by rotation and a certain amount of compression.

LEVERAGE.

Leverage, classed also as a function of the forceps, has a very limited field of application, namely, a slight amount of to and fro movements laterally in cases where little advance is made with each traction. The leverage must not, however, be carried too far from the median line, as the tip of the forceps may injure the the child's neck.

Vertical leverage is distinctly contra-indicated, as there is great danger of injury to the mother's bladder where this function is used. It is commonly observed that the uterus contracts when the forceps is introduced, and this is also classed as a function, called the *oxytocic or reflex,* but is of little moment.

In discussing the technic of the application on the forceps the terms *Pelvic* application and *Cephalic* application will of necessity be frequently used. Let us, therefore, get a clear understanding of just what these terms mean. By pelvic application is meant introduction of the instrument without any special attention being given to the presentation; thus, in a majority of instances in pelvic applications in vertex presentation, one blade will be applied over the parietal eminence on one side and the temporal region on the other. It can thus be readily understood how, when traction, with its accompanying slight compression, is made, the tendency will be for the head to rotate so that the bi-parietal diameter of the child's head occupies the tranverse of the pelvic cavity.

By cephalic application is meant the introduction of the forceps in such manner that the blades are placed accurately on the sides of the child's head so that when compression is made it will do the least harm. The pelvic application, while less scientific, is the safest to beginners. The difference between these two methods of application will be demonstrated later.

As a rule, when the forceps is applied and locked, the handles should approximate quite closely. If they do not, or if it is found difficult to lock the instrument, the blades are not properly placed on the child's head and further attempts to more properly adjust them should be made.

INDICATIONS.

The dictum "Do not use the forceps unless the life of the mother or child is endangered" is still a pretty good one to follow, especially for the beginner. It is my opinion, however, that considerable latitude may be allowed the experienced operator in the matter of indications, and that many hours of intense suffering may be spared the mother by a judicious and timely application of the forceps. Certain prerequisites should be complied with before the forceps is applied. For instance, the cervix must be completely dilated. If it is not, there will be great danger of extensive laceration and hemorrhage. This admonition, I believe, is "more honored in the breech than in the observance." The membranes must be ruptured. It can readily be understood how easily the placenta might be detached if the forceps were placed on the child's head and traction made before the membranes have ruptured.

The head must be engaged, and too great disproportion between the size of the pelvis and child's head must not exist.

Let us now discuss briefly the use of forceps in some of the abnormal presentations. Occiput posterior position is the most frequently encountered of the abnormal head presentations. In the majority of cases of this type anterior rotation eventually ensues, but in many instances the vitality of the mother is taxed to the danger point, through the long continued efforts at expulsion and increasing anxiety. Such a condition furnishes the indication for the use of forceps. The technic of the operation will be taken up later.

FACE PRESENTATION.

In making forceps application in a face presentation one must constantly keep in mind the fact that the chin must rotate to the front, consequently the transverse and mento-anterior varieties only permit of forceps application, for, once the chin has rotated posteriorly, successful delivery cannot be effected with the forceps.

AFTER-COMING HEAD.

Though not as frequently as in former years, the forceps is still occasionally applied to the after-coming head. The important point to be born in mind in delivery of the head in these cases is that the head, occupying as it does an oblique diameter, must be rotated to the antero-posterior before it can be quickly delivered, and it will be found this can be readily and quickly done in most cases by digital pressure over one side of the occiput and the temporal region of the opposite side, an assistant supporting the body of the child. If after rotation in this manner delivery is not readily accomplished, the forceps should be quickly applied and the delivery terminated.

CONCLUSIONS.

In conclusion, I cannot refrain from drawing attention to the importance of continuous un-

remitting attention to aseptic detail in all operative procedures pertaining to the delivery of a child. The abdominal surgeon works in a comparatively clean field, while the obstetric surgeon is obliged to operate through a region of the body which is constantly exposed to infection because of the proximity of the anus. In order that this danger may be reduced to a minimum it is well to have a large basin of warm 2 per cent. lysol solution at hand so that the hands may be frequently washed in the interim between tractions.

ABSCESS OF THE TONGUE.

J. VERNON WHITE, M.D.
DETROIT, MICH.

Abstract.—Location of abscess and difficulty of diagnosis.

Pathogenesis and etiology. Abscess of the tongue as a sequel to tonsillitis.

Literature on the subject scanty and cases reported few in number.

Treatment: Surgical, location of incision and method of drainage.

In reporting this case I do it on account of the unusual features involved in the production of this abscess. The principal features involved are, first, the source of infection, and second, the time involved in the abscess formation.

Mr. B. aged 28 years was referred to me by his family physician for treatment. The history of the case was negative beyond the fact that while in London, after the war was declared he was greatly worried over his business, he could not sleep nor eat; in consequence, he closed out his business and returned to Detroit. Two weeks afterward he contracted tonsillitis, and it followed the usual course. On the fourth day he began to feel pain in swallowing, radiating down the trachae and over the side of the neck which was accompanied with chills and fever. These symptoms continued, but, each day they developed into a greater intensity and caused a nervous irritability so characteristic of exhaustion, due to an inability to eat or sleep. This condition continued for ten days without showing any abatement of the symptoms.. On February 10 I examined him for the first time. He was suffering continually from pain, not only when he swallowed but during his composure.

The tongue was swollen and coated with a white mucous secretion. He could not protrude his tongue without causing intense pain. The tip of the tongue was apparently normal, soft and tractable, but the posterior two-thirds was very hard and hypertrophied, and occupied the whole buccal cavity. There was a thickening of a few sub-maxillary glands, otherwise there was no other manifestation of involvement of the tissue around the neck.

From the history of a few cases covering a period of about one hundred years, I am convinced that we are still ignorant of the facts relative to the causation of the lingual abscess judging from the reports obtainable.

Wood in 1856 attributed it mostly to direct injury resulting from irritation or corrosive substances, wounds, or bruises; besides he was the first to place before the profession something concrete regarding the etiology of this obscure disease. Although many had recognized it heretofore as being an imperfection of localized swelling of the tissue of the tongue.

Erechson states though it is very rare it occasionally occurs. A boy was brought to him some time ago with an elastic, fluctuating tumor of slow grouth and about the size of a small plum, situated deeply in the center of the tongue. On puncturing it an ounce of pus was liberated.

Keane substantiates the theory held by a few others that it is secondary to a parenchymatous inflammation of the tongue and at the same time appreciates the fact that an abscess of the tongue whether deep or superficial, may be due to the same provoking elements.

Craig, fifty years ago, described it under the name of lingual quinsy. An accute inflammation of the tonsil and base of the tongue, apparently a very grave disease, according to his report.

Simanowski recognizes two forms of abscess. "One which involves the gland substance, such as tonsillitis; and the second which involves the tissue surrounding the tonsil, a peri-tonsil invasion corresponding to a true quinsy." The tonsils encapsulated as they are protect the adjacent tissue by an almost impenetrable wall. Consequently, this more or less explains why an abscess in the tongue structure is so rarely found. If we look for laboratory evidence as to the causitive factor in producing this disease I fear we will be disappointed. Many germs of different types are to be found in the crypts of the tonsils as well as in the mucous membrane covering the faucies. Among the more common are the streptococcus and staphylococcus, these are quite numerous and are found quite frequently in the normal throat.

After careful deductions of all possibilities as to the cause of the deep abscesses I am constrained from attributing the cause to a direct infection. Consequently the only conclusion I have to offer is that the lymphatic system seems to me to be the most probable factor we have in dissiminating the offending germ.

The danger incidental to parenchymatous inflammation is always fraught with very great distress to the patient. The mere fact that its far reaching processes finds its way deep down into the structural tissue of the surrounding parts is enough to alarm the most optimistis individual. When we realize that it is encumbent on us to be open and frank in our communication then we should be extremely cautious in giving a diagnosis inasmuch as ordema of the larynx and strangulation are both likely to occur at any moment. From what information I could gather from individual members of the profession not one could recall of seeing a single case come under their observation; and from the many thousands of cases in my own practice not one case heretofore have I encountered. It is true I have seen one case involving the lingual gland, but not one case of abscess of the tongue.

The treatment in the case must be one entirely expectant, no general rule can be followed. An abortive treatment is useless and any efforts on the part of the attending physician to minimize the severity of the pain, will be met with disappointment.

Ice applied externally and hypodermics of morphine are the two remedies recommended. This to be kept under observation and be given according to the severity of the pain.

To examine the larynx it was utterly impossible owing to the difficulty in getting a view of the pharynx.

The larynx, I do not think, was involved, because of the easiness with which he breathed; seemingly without any effort.

Palpation revealed an intense induration upon compression. I could not feel any irregular prominence of the lingual glands. There was no fluctation noticeable, and the case continued the same until February 13, at which time, upon further palpation I discovered fluctation.

When fluctation is well established then the important point to be determined is where to make the incision to liberate the pus.

From my knowledge of the anatomy of the tongue, and the distribution of the vessel therein, I recommend that an incision be made below the tongue and a little to one side of the median line. This makes undoubtedly the most available point to puncture as it would afford a proper drainage and not likely to become reinfected, at the same time obviate the possibility of a trachoetomy.

The bacteria present were the staphylococcus and colon bacillus.

DISCUSSION.

DR. V. A. CHAPMAN, Muskegon: I have listened with a great deal of interest to this paper. I have had three such cases in the last eleven years. The Doctor's description tallies with my cases. The first case went on for a considerable time, five or six days, with the patient suffering considerably. I daily attempted to find out what was the matter, and eventually, at the last examination, gave a great deal of relief by pressing pretty hard with the tongue depressor and and bursting the abscess. That was my first experience. The other two cases were conducted a little more scientifically. One was in a man, of 76, where the symptoms were very grave, but an incision was made deep in the base of the tongue, from the side and underneath. I used a right-angled knife with a blunt point and a tonsil dissector. In this way I managed to get the abscess opened. The other case was seen last winter, and was recognized more easily, a free incision made before I felt any fluctuation, the abscess evacuated, and the patient got better, and was saved several days of suffering.

I am inclined to believe that these cases occur more frequently than is generally thought. In each one of my cases the abscess followed tonsillitis.

DR. B. N. COLVER, Battle Creek: I had an interesting case of this sort when I was Senior Interne at a dispensary in Chicago. This case gave no history of tonsillitis. The lack of intense pain and presence of dysphagia led to the diagnosis of carcinoma of the tongue by the surgeon, and the patient was asked to return, looking toward operation on the tongue in the hospital. Four or five days later he returned, with all the symptoms relieved, and with a history of a sudden appearance of pus in the mouth. This abscess ruptured spontaneously.

There is one suggestion I would offer in regard to the early diagnosis, looking to the treatment, and that would be exploratory puncture of the mass by hypodermic, with possible withdrawal of the pus, thus making diagnosis possible two or three days earlier and sparing the patient some pain in the days of waiting.

DR. DON M. CAMPBELL, Detroit: One interesting thing is the channel through which the infection takes place in a case of this sort. I have never been fortunate enough to see such a case, but they seem to be usually accompanied or preceded by tonsillitis. It is hard to see how the infection can follow from a peritonsillar infection. It seems to me more likely to be an infection of the lingual tonsil, and perhaps a similar lesion around the lingual tonsil as one would get around the faucial tonsil. This seems to me to be the most likely channel of infection in such a case.

DR. J. VERNON WHITE (closing the discussion): I looked the subject up very exhaustively, and the causation seemed to be somewhat obscure. I have come to the conclusion that we know nothing about it. It is only by a presumption on my part—excluding the possibility of all other germs—that I came to the conclusion that it must be the lymphatics that infect these structures. However, I think that we see more cases of infected lingual tonsils, as Dr. Campbell just said, than we do of deep abscesses. It is not unusual for the superficial glands to become inflamed. But I really think it is very unusual for the deep structures at the base of the tongue to become involved.

The length of time between the abscess formation and the time at which the infection took place is astonishing. In other parts of the body, if we have an abscess, we can generally get a history of it, and come to some conclusion in a very short time, but in this case it lay dormant for four days after the tonsillitis.

From what information I could gather, the incisions that have been made heretofore in such cases have been made through the dorsum of the tongue, by pulling it forward. In this case I thought the easiest way would be to use a trocar and cannula, raising the tongue and going through anteriorly. In this way the larger vessels are not wounded, and I think it is the safest plan. In operating through the base of the tongue there is danger.

OBSERVATIONS ON TONSILLECTOMY SOME YEARS AFTER OPERATION.*

B. R. SHURLEY, M.D.
DETROIT, MICH.

With a wave of enthusiasm for the complete enucleation of the faucial tonsil, with a display of innumerable and nameless legions of knives, forks, hooks, snares, dissectors, clamps, tonsillitomes, needles of different sorts, varieties, curves and twists, with text-books, monographs, printed discussions and arguments that would tax the capacity of a university, armory, or gymnasium, to contain them all, tonsillectomy was ushered in as a revival from the ancient days of Celsus.

It has taken a formidable place to which it is justly entitled among the common operative procedures of the general practitioner, the pediatrist, the general surgeon, the eye, ear, nose and throat specialist, or that rare and almost extinct variety of exclusive specialist called the rhinologist and laryngologist.

It is undoubtedly timely and interesting from the standpoint of the patient and surgeon that the indications, technic and end results should reach some clearing house among our great special societies and lead to a well established uniformity in principles and practice. Those of us who are privileged or pained to look back over two or more decades where a portion of our life's work has been given to the removal of tonsils by the old tonsillitome will recall many cases that come before us to-day as young men and women with normal throats, one-third to one-sixth of the base or root of tonsils in place.

It is estimated that thorough tonsillotomy by an expert resulted in the complete relief of 80 to 85 per cent. of all cases operated. My own observations would concur in these percentages but it must be remembered that the operation of incomplete removal as generally practiced by the tonsillitome until 1903 and a few years later was an operation in selected cases only.

The pathologic tonsil of tonsillotomy days was only the hypertrophied or enlarged tonsil. It is therefore evident that the argument of sufficiently good results with tonsillotomy of the old technic can refer only to one class of obstructive tonsils.

The buried and septic tonsil remained undisturbed under the old ideas and the pathology of focal infection required more radical measures. Tonsillectomy by some of the standard methods of choice has taken its place as the radical procedure of necessity. It has rapidly passed by reason of excellent results from a surgical furor and fad to a sane, legitimate operation based upon well established indications.

The views of the radicalist who would remove all tonsils at three years of age and the conservatist who would never operate because they had a physiologic function are no longer heard.

An analysis of results of one thousand tonsillectomies at Harper, the Childrens' Free and the Detroit Tuberculosis hospitals, has established for us definite personal opinions which conform in general to the accepted procedure and results of many operators in a similar field.

The clinical material under observation was taken and selected in the schools and dispensaries from the poorest class of a large city. The indications for operation and examinations are the observations of the school physician, the director of the clinic, the laryngological assistant at the nose and throat department of the dispensary and the interne of the hospital. The final examination is made at the hour of operation. With these safeguards it is fairly certain that only worthy and necessary operations are performed. The question of performing only necessary operations is indeed a factor in any resumé of results.

A well balanced conservatism is established when judgment, experience, consultation and progressive honest endeavor unite on an opinion of necessary surgical interference.

Tonsillectomy cannot be considered as a trivial procedure. If statistics were absolutely truthful a considerable number of fatalities throughout the world following directly in the train of this operation might be collected. One who appreciates the danger of hemorrhage, anesthetics, sepsis and thymus disease with their legitimate percentage of mortality, must feel that tonsillectomy is a hospital operation if the best results are conserved and the life of the patient safeguarded.

It has been my good fortune to operate continuously for over twenty years without fatality but as the number of cases operated demands a percentage of fatal accidents this may be expected soon in the future.

I consider the removal of tonsils and adenoids when thoroughly done as the most satisfactory procedure that falls to the lot of the nose and throat surgeon. The results speak for themselves. The prophylactic value to the young child in the prevention of naso-pharyngeal ca-

*Read at the Fiftieth Annual Meeting, M.S.M.S., Grand Rapids, September, 1915.

tarrh and catarrhal deafness of adults and in later life eannot be estimated. The influenee of tonsilleetomy upon foeal infection subsequently prevented is immeasurable.

The inter-relation of pathologie tonsils and appendieitis, tuberculosis and rheumatism, abscess formation and sepsis with the attending lowered resistanee can be merely mentioned so intrieate are the problems and so meager is our definite information.

We know, however, that the inter-relationship of the tonsils with the lymphaties, the thyroid and other ductless glands is sueh that the individual following tonsillectomy frequently puts on weight and develops a better resistance to mierobic infection.

The results of tonsillectomy are partieularly brilliant in obstructive or septic ehronic tonsillitis often with complicating quinsy.

Cervical adenitis including the tuberculous variety when operated should include a removal of the tonsils. The importance of this souree of trouble is frequently overlooked by the general surgeon.

The prophylactic and curative value of tonsillectomy in cases of Graves disease following tonsillar or peri-tonsillar infeetion is well reeognized.

Pressure of the velar lobes in the region of the Eustachian orifiee or suppurative middle ear disease frequently show prompt relief after tonsillectomy.

The erime of leaving a very small piece of tonsil tissue at the edge of the anterior pillar or at the base is truly not as great as the criticism of some of our friends might indieate.

Results should improve with the development of teehnie and experienee. Four methods are popular in this eountry—First, the finger enucleation whieh is useful, historieally, as the method whieh Celsus employed, whieh could never be popular beeause many tonsils are so adherent that undue foree must be used, many operating fingers are so large the procedure is elumsy and dangerous, and beeause the idea of disseetion by the sense of toueh seems unsurgieal. Neverthcless, George Riehards of Rhode Island and Chas. Riehardson of Washington have produced results by this method that are comparable with all others and stand the test of time.

This method was adopted in a series of the earlier operations at the Childrens' Free Hospital from whieh these results are drawn. It was abandoned because it is only applicable to tonsils that are not adherent.

Sharp dissection with knives or scissors has been used in a series of operations in adults under local anesthesia. This is generally popular in the east and among men trained there. Personally, it was abandoned in this series in favor of the snare and blunt dissection which seemed to result in less hemorrhage.

More than two years ago the Sluder instruments were perfected and this method was adopted. The results have proved more than satisfactory. One instrument takes the place of many. It is quick and reliable. In ehildren, especially, a complete enucleation may be performed in a minute with a first stage ether anesthesia. It is particularly valuable in cases with old heart lesions where the shortest anesthesia is desired.

The teehnie is fairly difficult to master but the results of a quick operation with a minimum of traumatism to the pillars and uvula is highly satisfaetory. The instrument is largely directed by the sense of toueh and the unnecessary use of swabbing or a suction apparatus simplifies the procedure. In five hundred operations on children it has been neeessary to ligate onee for post operative hemorrhage.

The ehoiee of teehnic and the results therefrom must ever remain a matter of personal choice and individual skill. Minimum traumatism, post-operative hemorrhage and slight anesthesia, with no fatalities in a great number of tonsillectomies should be a sufficient guarantee of usefulness to hold a well earned plaee for the quiek Sluder method or some slight modification of it.

It is impossible in a great city, to loeate more than 30 per eent. of hospital patients after five years. A series of questions relating to subsequent trouble is recorded and a thorough nose, throat and ear examination made. The results up to the presenl are truly eonvincing of the great effeeaey of tonsilleetomy.

We have underway a statistieal study of a series of one thousand cases many years after operations. Our progress is slow on account of the great diffieulty of loeating poor people who move many times in a few years.

Tonsillectomy has passed the stage of argument or question. It remains for us to apply it only when neeessary and let the benefits speak for themselves.

DISCUSSION.

DR. R. B. CANFIELD, Ann Arbor: I think it is well worth while to discuss this subject, although from a somewhat different standpoint from that which is usually enjoyed. For instance, Dr. Shurley is not so much interested in the kind of technic used or the indication for operation, but in the condition of his patient five or ten years after operation. That, it seems to me, is the important thing. What permanent im-

provement do we secure? It seems to me that the local conditions depend largely upon the kind of technic, its object, and the injuries which are incident to the operation—also upon the size of the tonsil, and also upon the amount of lymphoid tissue elsewhere in the throat. We are not infrequently confronted by a patient, four or five years after operation, who has some disagreeable condition, probably directly the result of his tonsil operation. Such disagreeable results are found in children who have a tendency to hyperplasia of lymphoid tissue in the throat. We are often pleased to see marked improvement in the general condition of our patients, that is, in the blood condition, which improves from 15 to 20 per cent., as a rule; improvement in the general condition in all points, and the disappearance of rheumatism, heart lesions, kidney complications, and the disappearance of a cervical adenitis. We are sometimes, however, confronted by patients who have these various troubles and who experience no improvement following the tonsillectomy. In other words, the tonsil is a focus, the elimination of which is frequently attended by very satisfactory results. Cases of endocarditis or myocarditis frequently show a very marked improvement. However, we see recurrences of the heart lesion after a tonsillectomy not infrequently. Fortunately, however, these recurrences come less frequently, and not infrequently with the passage of time entirely disappear. We not infrequently see in a child, especially the thin-skinned, freckle-faced, thin child, the appearance of a bronchitis following a very successful tonsillectomy. It seems as if the tonsil might have some protective function when healthy. It would seem as if in this kind of a child disagreeable sequelae follow a successful tonsillectomy. Such children not infrequently develop a cough; they sometimes show an increased susceptibility to head cold, with profuse naso-pharyngeal discharge.

After so many hundreds of thousands of tonsillectomies as have been performed, it seems as if we might pause and consider whether we should not make a much more careful examination of the child before we operate, and take into consideration what the chances are for a marked and permanent improvement before we operate.

In regard to one point which Dr. Shurley brought up, that is, the leaving of a mass of tonsil tissue at the base, is concerned, frequent histological examinations of this tissue have led me to believe that this is rarely tonsil tissue, that is, in cases where the tonsil had been removed in its capsule. This is almost always, if not always, a hyperplasia of lymphoid tissue. I have been asked to reoperate some of my cases in which I felt certain complete enucleation had been performed, and unless I found some distinct indication for the removal of this hyperplastic lymphoid tissue I preferred to leave it, because the lymphoid tissue, while it has no very distinct function apparently, seems to be needed. Consequently, unless this is distinctly a mass of tonsil which has been permitted to remain after operation, it seems to me that a better permanent result is secured by permitting it to remain.

DR. SHURLEY (closing the discussion): I have nothing further to add except that it seems to me that a few applications of silver to this exuberant tissue that develops at the base is quite sufficient to relieve the trouble without any further surgical procedure.

TUBERCULOSIS OF THE SEMINAL DUCT.*

H. W. Plaggemeyer, M.D.
DETROIT, MICH.

It is a generally accepted fact that, tuberculous infection in the genito-urinary tract is, as a rule, secondary to a focus of infection elsewhere in the body; in the major portion of cases in the lungs, intestines, and bones. That the disease, however, does occur primarily, in the genital tract, has now been demonstrated by a number of observers. In this regard, the cases reported by Crandon, Saxtorph, Krzywicki and others, of prostatic involvement without appreciable tuberculous process in other parts of the body, and of Wulff, Burckhardt and Koll, in which the primary involvement was evidently in the prostate, are of more than passing interest.

Guisy in 183 cases of urogenital tuberculosis found ten involving the prostate and seminal vesicles alone. Saxtorph in a series of 225 cases, notes nine such occurrences. In his classic contribution to the subject of genito-urinary tuberculosis, Walker found that the disease was *stated* to be primary in the genito-urinary organs with reference to the whole body in fifty-two out of one hundred seventy-four cases. On the other hand, the same author found, in *experimental* infections, that no matter what mode of infection was used, the lungs were always involved and usually showed the most advanced process.

Regarding the genital tract as a separate entity, the age instance is fairly well distributed, Lyons reporting a primary infection in the seminal vesicles of a child of twenty months, and Barney an epididymal tuberculosis in a baby of eighteen months, and in a man of seventy-three. Generally speaking, one might say that genital tuberculosis is very rare up to the age of four months, the percentage gradually increasing till it reaches its maximum in the third and fourth decade. The comparative infrequently in the pre-puberal period may doubtless be explained by the latent activity of the genital duct at this time, the relatively scant blood supply reducing the hazard of hematogenous infection. The same explanation may be offered for the fact that, as yet, no epididymis has been reported as tuberculous, in cases of undescended testis, possibly due to the fact, that all undescended testes are atrophied to an extent, and physiologic activity, though present, is in abeyance.

In early life the disease often affects both sides, but after twelve, the majority of cases present a unilateral involvement when first seen. In Barney's series of 153 cases of epididymal tuberculosis, 35 per cent. were on the right side, and 65 per cent. on the left, a bilateral involvement being present in only 30 per cent., as against 70 per cent. unilateral. These figures shatter the idea, long held, that left sided epididymitis is the rule, and right sided involvement the exception.

The great mass of evidence presented by different observers, points to the epididymis as the organ most commonly the seat of infection, primary for the genital tract. Cabot says that

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genito-urinary tuberculosis is a misnomer; that we should come to recognize that urinary tuberculosis is primary in the kidney and genital tuberculosis is primary in the epididymis. In Walker's second series of two hundred seventy-nine cases, the kidney was first involved in 184, the epididymis in 80, the prostate in six, and the seminal vesicles in two. Keyes, however, holds the view that "the weight of evidence goes to show that in many, if not all cases, the prostate or vesicle is tuberculous before the epididymis becomes so." His contention is based on the fact that, "with a tuberculous epididymis, the prostate is never normal, and is sometimes manifestly tuberculous to rectal touch. On the other hand, with a tuberculous prostate or vesicle, the epididymis is not necessarily involved; also involvement of the prostate or vesicles, or both, precedes involvement of the second epididymis.

One cannot deny the verity of these conditions from a clinical standpoint. But there is also much authentic evidence to the effect that the epididymis is, in most cases, affected first.

Watson in a series of twelve cases, found on careful examination that the tuberculous infection began in the epididymis of one side. In four of these, there was an extension to the vas and the vesicle of the same side, without any evidence that the prostate had been involved. In none of the other eight did the the process advance beyond the epididymis or testis, these patients being watched for periods varying from eight to twenty-three years. The same author claims to have seen only three cases in which the disease was present in the prostate, as the only part affected below the bladder. In these the kidney was thought to be affected in each instance.

This would seem to offer evidence that the disease may be manifested at either end of the tract, with an interval of time between its manifestation at either point, the kidney or the epididymis. Also it is clearly shown that an epididymal infection may follow, chronologically at least, a renal infection of the same side without implicating the prostate or seminal vesicles, and yet again, that the process may begin in the epididymis and remain localized there, without ever involving any other part of the tract.

The genital tract, in its development, bears a striking analogy to the urinary tract. The epididymis is a remnant of the mesonephros, and, in its rudimentary excretory capacity, it might be expected to pick up micro-organisms from the circulation in a manner entirely similar to that of the kidney. Theoretically, one might then look to the epididymis as the primary seat of invasion for the genital tract, as the kidney is the recognized primal site in the via urinaria. A striking example of this developmental relationship is seen in the case cited by Frisch and Zuckerkandl, in which a patient had a tuberculous kidney removed. The mucous membrane of the ureter and the trigone of the bladder were found to be implicated in the process also. Several months later, the epididymis became tuberculous without either the prostate or the seminal vesicles being involved.

By the same token, the prostatic anlage and its early functions, being of such different nature from that of the epididymis, it is easy to see why this gland and its adnexa, the vesicles, might be less frequently the seat of primary infection. And continuing the adverse comparison still further, and by the same logic, one might be led to suspect a priori, that from their wide difference in genesis, as well as by their relative remoteness from direct urinary infection, the vesicles would be less open to primary infection than the prostate, and this is fairly proved to be the case by the best obtainable statistics in a proportion of one to three.

Much experimental evidence has been put forth to prove the capacity of normal vesicles to secrete tubercle bacilli. Landouzy and Martin found in guinea pigs, that if the lumenar contents of the vesicles, were taken from tuberculous animals in which the vesicles were not involved, the material produced tuberculosis when injected into other animals. Sirena and Pernice also found that they could produce tuberculosis in the peritoneal cavity of a dog, by injecting material gotten from the vesicles of individuals dead of tuberculosis, but having no involvement of the vesicles. Maffuci infected rabbits with large doses of tubercle bacilli. In twenty-six days he discovered the bacilli on the mucosa of the otherwise normal vesicles. Nakarai, in a human subject, discovered tubercle bacilli in normal vesicles. Jaechk, Gaertner, Cavagnis, Albrecht, and Kochel all conclude that these organs secrete the bacilli more often than any other part of the genital tract.

In the face of this evidence one might still assume that the examination of these organs has not been exhaustive enough to warrant the belief in this healthful secretory faculty as an es-

tablished fact, and it is extremely probable from the experimental work of Walker, that all vesicles which secrete tubercle bacilli have a tuberculous focus somewhere in the submucous tissues, which is the first site of election. Whether the normal vesicle can harbor and then cast off the tubercle bacillus with impunity, or whether its histone producing faculty has a deleterious influence on its capacity as host to that organism, through its agglutinating power on the tubercle bacillus, as in some of the lower animals can, on the face of the evidence offered, be viewed at present, only as an unsolved problem. Suffice it to say, however, that, though the seminal vesicle infection is present as a secondary involvement in about 60 per cent. of cases of tuberculosis of the genital duct, its primary involvement is in all probability an extreme rarity, and from the standpoint of its primarity alone, is not to be viewed essentially as a surgical factor. As an academic fact, the developmental analogy of the seminal vesicles and the urinary bladder is striking, and our minds have long since been made up to the method of attack in tuberculous disease of the latter. One is quick to leave the bladder and to attack the kidney when it is definitely known that the latter is involved, and generally speaking, one might do worse than follow the same rule in the case of the vesicles and epididymi.

Approaching the field of controversy as to local avenues of extension in the genital duct *per se*, one is faced with much argument, and much experimental work, purporting to prove extension via the vas in each direction.

The work of Baumgarten and Kraemer would make it appear that from a posterior urethral infection, the process is never propagated through the vasa deferentia to the epididymis, while infection of the vas or seminal vesicles *does* extend to the urethra, in fact, that an advance of the process never takes place against the direction of the seminal current. In a large number of cases of experimental tuberculosis of the prostate and vesicles, they did not observe a single animal in which the disease had extended down the vas. They claim that the constant stream in the vas from below upwards prevents the non-motile tubercle from going down, that the ciliated epithelium tends also to prevent the downward passage of the organism, and that it requires too many days for them to multiply in the normal secretion. Directly opposed to this are the experiments of Paladino-Blandini, which indicate that the tuberculous, as well as other micro-organisms placed just within the external meatus *do* infect the deeper parts of the tract by direct extension backward along the urethra and directly against the current. They do not, however, prove extension further, through the vas.

It has long been a mooted clinical question as to whether local infection of the glans taken place through coitus. The weight of authority is against this, yet Frank, Schuchardt, Tedenat, and Prat-Lacene have all recorded very suspicious cases, and the possibility must be granted. Garin cites the case of a man with ulceration of the glans, followed by tuberculosis of the prostate, vesicles, and epididymis, and Julius Frank, the case of a boy of fourteen years with a tuberculous ulcer of the glans followed by infection of the epididymis. Several cases have been reported, two in the knowledge of the writer, where infection of the prepuce with extension backward has taken place from Rabbi, known to be tuberculous, in performing the orthodox rite of circumcision. Neither of these authors, however, prove that the deep infection was not a *hematogenous* one.

Teutschlander argues as follows in favor of the descension theory:

(1) Ciliated epithelium does exist in the epididymis but not in the vas.

(2) Primary tuberculosis of the vesicles is often overlooked, for the reason that it is not searched for in the early stage.

(3) One should not draw conclusions from rabbits, for the reason that their vesicles and prostates differ so markedly from those in man.

(4) Reports several cases in the human in which the disease seemed certainly to have extended from the vesicles partly down the vas.

Stonham had a patient in whom the left seminal vesicle was very much enlarged. When the left vas was opened the mucosa beginning with the prostate and extending for some distance was studded with small tubercles and ulcerations. The disease ended abruptly and beyond this point the vas was sound and the epididymis was normal. This seems to be an instance of an undoubted extension down the tube.

Oppenheim and Low found that by stimulating the hypo-gastric nerve, they could produce a reversed peritalsis in the vas. They also found that by stimulation of the verumontanum, they could bring about a similar result. This they were led to believe held true for men as well as for rabbits and guinea pigs. They therefore believe, that, during an infection of the posterior urethra, an irritation may produce a reverse peristalsis and set up an infection of the epididymis, by direct descension.

Walker, in a large series of rabbits with tuberculosis of the prostate and vesicles, noted one animal only, in which he thought the infection might possibly have passed down the chord. In two animals in which he placed pieces of tuberculous lung in the urethra, there was wide spread involvement of the vas and epididymis, and careful examination of the specimen made it appear that the extension was a direct one down the vas.

In another series of eleven animals, in which tuberculous cotton was inserted in the seminal vesicles, two had involvements of the epididymis, which he took for evidence of downward extension. Of thirty animals, in which the injections were made into the posterior wall of the bladder, two showed implication of the vasa. In one, the epididymis was also affected. In the other, the *whole right vas and part of the globus minor were affected;* on the other side the vas was uniformly diseased. The above instances by a most careful observer, point very strongly to the conclusion that the disease *may* descend.

However, the same author noted in his experiments, the great frequency and ease with which the disease spreads from below upwards, and the relative infrequency and difficulty with which infection descends.

As to the method by which the disease passes from the epididymis upwards, it is asserted by Baumgarten that the bacilli are carried upward by the stream of the vas. To this theory the following objections may be raised.

(1) Tuberculosis in many instances affects the vas to such a degree that the lumen in the lower part is entirely occluded and often obliterated before the upper part is involved.

(2) When the vas is ligatured in animals, the infection is delayed, but later the disease passes on above.

(3) Again, if the force of the vas stream were strong enough, there would be implantation equally and simultaneously along the epithelium lining the lumen. It is possible that ascension by the subepithelial lymphatics would explain this.

Baumgarten and his pupils are probably right in the main, but that they go too far in asserting that descending infection never takes place, the work of Walker would show.

How else could one explain a tuberculosis of the vesicles or prostate and a continuous involvement of the adjoining vas, with a free epididymis or testis. If it were not direct infection, it must be through the lymphatics or the blood stream, in which case, one would certainly expect involvement of the epididymis or testicle, or both.

Ascension certainly seems to be the rule; descension the exception.

All that can be actually postulated as to the peripatetic activity of the tubercule bacillus is that it enters, in the great majority of cases, by way of the kidney into the urinary tract, and descends by preference, and mounts from below with reluctance, if at all, and then most probably by the lymphatics. The large proportion of cases in which the epididymis or testicle when involved, appear clinically to be the first seat of tuberculous lesion in the genito-urinary tract, and the relatively greater proportion for the genital tract alone, as well as the frequency with which the disease apparently remains limited to these structures, point strongly to the blood current, or the lymph tract, as the usual path of approach. This evidence is augmented by the large number of recorded cases in which the foci were subepithelial or intertubular. A further verification of this premise is found in the frequency with which the globus major is attacked in unilateral cases, or in which, if a wider area be involved, the upper portion of the epididymis is evidently the site of the first involvement, with or without involvement of the upper pole of the testis. This condition when present without complication, is practically always primary, and is considered by many, a diagnostic point, though Koll has recently shown that in other infections, such as colon, staphylococcus, streptococcus, etc., the clinical manifestation may be so similar, that only careful study of the removed epididymis will tell the story.

To further confuse the time honored clinical picture, Walker's injection of the aorta with tubercle bacilli in twenty-eight animals, gave the following results: Eight showed tuberculous epididymitis, five on the left, three on the right; in four the globus minor was affected; in two the globus major. This would point to the globus minor as the more common locus of hematogenous infection, and is at variance with the clinical observations of others.

The involvement of the second side usually occurs as in gonococcal infection, in the globus minor, most often with fulminating symtoms, suggesting mixed infection. It would seem then, that in many cases, when the second side becomes involved, the disease has traveled up and involved the prostate and seminal vesicles, and then gone *down* the vas, just as in Neis-

serian infection. This is clinical evidence in favor of the descension theory, by way of the lumen of the vas.

To recapitulate; massive infection *can* pass in either direction in the vas by continuity, but direct conduction by the lumen is rare, and if accomplished is negative in its effect on normal epithelium. Decending infection from all parts to the genital tract is in most instances via the blood stream, and ascending infection to other parts of the genital tract by way of the lymphatics, an infected vesicle on the opposite side to the primarily infected epididymis being explained by the decussation of the lymph paths at the base of the bladder.

TREATMENT.

One must frankly confess at the outset, that there is no subject in the range of surgical diseases of the genito-urinary tract about which there is so much diversity of opinion among competent observers as in tuberculosis of the seminal vesicles and epididymis. The expressions of opinion gotten through personal correspondence with leading clinics and sanatoriums of the country are conflicting, but the composite result may be summed up briefly as follows:

When tuberculosis involves the epididymis alone, epididymectomy should be performed; this, in face of the argument advanced by some that operative interference may cause a flare up on the opposite side. The march is rapid without operation. In the last series reported from the Massachusetts General Hospital, of thirty-three unoperated epididymi, 18 or 52 per cent. became involved on the opposite side within a year after invasion of the first side.

If both epididymi are involved, double epididymectomy is indicated, for this operation does not impair masculinity and sterility has in most cases already taken place, even before the second side was involved.

Knowing that invasion of the second testicle is likely in either case, and recognizing the great value of the testicular hormone, it is questionable whether orchidectomy is ever indicated. Some of the reported results of subsidence of activity in this gland following epididymectomy are little short of marvellous, and when it is mechanically possible to remove the epididymis and still leave the testicle some blood supply, it is safe to hope that, except in rare instances, the latter can be saved. In none of Barney's cases did the patient return for subsequent orchidectomy and Keyes reports one case only. and that as a rarity. When both epididymi and testicles are involved, it is better to incise and drain, if pus is present. In regard to the removal of the vas, if the latter is involved massively in its entire extent, the high operation of Cabot is the procedure of choice, but the advisability of this method as a routine procedure is open to question. It is doubtful if the opening of the tissues will in any way benefit the further development of a tuberculous peritonitis, if such a condition has already supervened.

In the experience of many active workers in this field, the removal of the epididymi and contiguous portion of the vas has had a most signal effect on the process in the vesicles; the infection has receded, and the vesicle have become fibrous. Recently Young has been advocating vesiculectomy under certain conditions. The operation is a difficult one, and two of the largest clinics of the country have each noted four cases of impotence following the operation. These reports are, as yet, unpublished. Still, in the type of cases selected by Young, where the disease is limited entirely to these glands and does not involve the prostate, vesiculectomy is unquestionably a splendid operation, because it removes entirely the focus of disease. On the other hand, if the prostate be involved, vesiculectomy should not be performed, as the chance of persistent perineal fistula is too great. This may appear as too conservative to those in favor of radical removal of all caseous foci, but considering the type of disease with which we are dealing, it is probably better to err on the side of caution, especially where the lower duct is first involved. For as has been noted, the removal of the first part involved in a large number of instances, causes recession of the process in the higher parts which are so frequently the victims of a secondary invasion.

The prognosis in primary tuberculosis of the genitals in children is usually good. In fact there seems to be a limitation of the tuberculous process in all organs of children, the one notable exception, of course, being the meninges. This tendency to localization in the pre-puberal period in contra-distinction to the wider involvement usually encountered in later periods of life is a strong argument for radical operation with a view to permanent cure.

Too much emphasis cannot be laid on the value of hygienic and climatic treatment, both pre-operative and post-operative, especially the use of heliotherapy as advocated by Lawrason Brown, for it must be kept in mind that in the larger percentage of cases we are dealing with

more or less generalized tuberculosis in other parts of the body. The writer is in favor of Corbus' idea of active immunization before operation by producing, in maximal amounts, antibodies to all constituents of the tubercle bacillus, it being understood that the patient has no closed foci from which absorption is taking place and is not already supplied with an excessive amount of antigen.

ULTIMATE RESULTS.

Of the one hundred thirteen cases followed at the Massachusetts General Hospital, 27 per cent. have died of some form of tuberculosis. Of these deaths, 14 per cent. occurred within one month, 32 per cent. within six months and 50 per cent. within one year after operation. During the first six years, 85 per cent. died, while between the ninth and eleventh years 10.7 per cent. succumbed. Miliary, renal and lung involvement, are, in order, the final types of the disease. The conclusion reached in this report is that until at least ten years have elapsed after operation, no patient can be said to be cured of tuberculosis.

In conclusion, genital tuberculosis in the male is a very grave affection, and, except in the case of children, where the local process often remains the only tuberculous focus in the body, operation is only to be looked on as one of the means to an end, and conservative effort is to be looked upon with favor. The survival of the patient, primary foci being removed, depends largely on the ability of his body to immunize itself to the disease, to the development of which immunity our chief efforts should be directed.

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THE VALUE OF THE SOCIAL SERVICE DEPARTMENT IN THE DISPENSARY AND HOSPITAL TREATMENT OF SYPHILIS.

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The prophylactic treatment and management of syphilis as a disease is far more gigantic a problem than the treatment of the symptoms of syphilis. The most successful treatment of syphilis as a disease is now carried on in the army and navy medical service of most of the civilized countries. With the military regulations they can follow up and periodically treat syphilis until the disease is no more transmissible and in a certain per cent. of cases permanently eradicated.

The next most efficient control of the syphilitic is in private practice where the syphilographer is able to obtain the absolute confidence of his patient and conveys to his patient the importance of a periodical study and treatment of his infection.

The most unsatisfactory treatment of syphilis is that which is being administered in the general hospital and dispensary service. In most general hospitals the old regime prevails, that of treatment of the lesions of syphilis only, the patient being allowed to disappear and continue to transmit the disease.

Not all of the blame can be placed upon the medical profession regarding the criticisms of the old treatment and care of the syphilitic sufferer. Boards of governors and trustees of general hospitals have for many decades refused syphilitic hospital treatment other than that given in their dispensaries. Syphilis was looked upon as not only dangerous to all hospital service but was considered a disease brought about through luxury and vice and the sufferer was compelled to seek solace for his affliction from the unscrupulous advertising quack. The most gratifying change has come about and is still in progress in the attitude of the governing bodies of our hospitals. Today the syphilitic is admitted as a syphilitic and receives the care of hospital medical service with no questions asked as to whether the disease is acquired or innocent in its origin. He is treated with respect and not looked upon as a social leper, and from such service is led to again respect himself.

With modern means of diagnosis obscure conditions which have heretofore been unsuspected syphilitic infections are being definitely recognized in appalling numbers until the percentage of syphilitics in our country in rural and city districts is one in every fifteen. The time is not far in the future when this disease must be considered by the state and nation as the most important problem pertaining to the public health of this country.

The object of this communication is to convey some knowledge of what some of our hospitals are trying to bring about in the stamping out of this disease. In our hospital and dis-

pensary service the most modern diagnostic means have been put at our disposal and by such means we are not only treating the disease to eradicate the present symptoms but we are in a systematic way re-examining patients who register under our service. Such laboratory examinations are afforded the patient without expense in cases where we find the patient unable to bear such expense. This service endeavors through its follow-up social service system to convey and instil a personal interest in every individual case and also the home from which the patient comes.

The class of patients composing an ambulatory clinic is at the best uncertain, difficult to control and, as a rule, of a lower mental grade than the majority of patients in a private practice. Those, however, who have diseases of which they themselves are aware, will return for treatment without urging as long as the symptoms of those diseases are manifest. It is, of course, an obvious fact that syphilitics will return for treatment provided they have symptoms of the disease, and it is also true that they stay away as long as they possibly can. It is needless to say that this method of treating syphilis symptomatically has long been discarded and a patient nowadays who comes to be treated for syphilis should be so carefully watched that subsequent symptoms do not develop. This, however, is an ideal state which has not yet been attained, but we are perfecting our system constantly and we hope that deserving syphilitics can be treated from the beginning to the end of the disease without symptoms.

The real problem lies, not in getting the luetic to come to the dispensary, but in keeping him coming at times when he is liable to become indifferent under the assumption that he is cured. With that end in view we have adopted a working plan in the dermatological service at Harper Hospital which comprises both the In- and Out-patient Departments.

When an active syphilitic is admitted directly to the Department of Dermatology his history is taken and an effort is made to discover where and how his infection occurred and what other members of the family were exposed to infection. This is for the purpose of protecting the innocent and, if possible, preventing the infection of others by getting at the source of the disease. It also serves to enlighten us as to whether more syphilis is being transmitted by the public or clandestine prostitute or whether more are infected innocently than otherwise. These statistics will be published as soon as enough investigations have been completed to make them of value.

In order to make the control of the syphilitic more certain *all* cases of syphilis should be *treated* in one department. Many objections are raised to this, however, as the internist does not wish his cases of aortitis treated by a dermatologist and the neurologist would naturally wish to keep his paretics and tabetics under his own observation. The method of treatment adopted should be as nearly uniform as possible and the patient not allowed to remain away for long periods of time. How, then, can this be accomplished if luetics are treated in several different departments, some using a follow-up system, others not? The dermatological department is perfectly willing to treat all cases of syphilis of any type but it would not desire to have the care of observing all the internal and nerve cases and therefore would suggest that these departments work conjointly, all observations on internal cases being made in the department of internal medicine, neurological cases in the department of neurology, etc., while the treatment would be given under their direction in the department of dermatology and syphilis. This is the plan adopted by the New York City Associated Out Patient Clinics, whose requirements appear elsewhere.

Those patients who appear in the primary stage with an initial sore of any type are given a dark field examination which is repeated as often as necessary until syphilis is proved or until it is impossible to make a diagnosis from the sore. In the latter event a Wassermann test is made at weekly intervals until it becomes positive or all danger of the infection being luetic is past. It is impossible to estimate the benefit derived from being able to have a positive diagnosis made at the earliest possible moment and it has only been since the establishment of the Theodore Buhl Memorial Building that these aids have been at the disposal of the Out Patient Department. We are also greatly indebted to Dr. P. F. Morse and his corps of able assistants for their painstaking work in this connection.

Even though the clinical evidence is unquestionably syphilitic, the patient is given a Wassermann test and we are often surprised to have a negative report returned. This, however, does not diminish our faith in the reaction a particle as our patients are in all conditions of health, perhaps congenitally affected, and probably are often unable to form antibodies. We also frequently find a positive Wassermann in patients

with no history and no symptoms, but they are not treated for syphilis unless they have symptoms.

In general a definite routine plan of treatment is followed for all patients, modifications being adopted only in individual cases where the patients are unable from some cause to attend regularly. This plan consists of intramuscular injections of mercury given at intervals varying from four to seven days, usually giving about 1½ grains of mercury salicylate weekly, changing this as occasion demands. Those patients who are able to buy a dose of salvarsan are given this also either before or after the course of mercury and for those who cannot afford this luxury but who need the arsenic a dose is procured through the city poor commission. These courses of injections are varied at times, in those who cannot stand them, by giving inunctions, this plan being adopted for all children.

After the first course of treatment a rest is given for about six or eight weeks, potassium iodid being taken for two weeks of that period. The mercurial treatment is again started and continued for another two months followed by a rest after which treatment is guided by the Wassermann test.

It is unusual for patients to complain of this form of treatment as the pain and discomfort are comparatively slight after the first few injections, some even preferring this to the disagreeable inunctions or to taking pills. In this way we see our patients often, can keep them under better control and vary the treatment to suit their requirements.

In the event of any luetics developing symptoms due to any other cause, they can be referred to some other department for diagnosis and opinion or treatment if necessary. Many cases are regularly referred to their original departments for examination to note the effect of treatment and it is only by such interrelation of departments that the best work can be done for the syphilitic. All varieties of tests and reactions can be obtained and if necessary the patient can be placed in a ward bed for these observation to be made.

It frequently happens that patients are admitted directly into the hospital proper when they are in a highly contagious condition and their associates would be in danger of contracting the disease. They are then treated until active lesions are healed when they are referred to the Out Patient Department and the treatment continued. Patients may also be referred from the Out Patient Department to the house for treatment of special conditions, both the in and out patient departments working in harmony.

The question of prophylaxis is also taken up as the entire work is aimed at the cure of active syphilis and the prevention of infection. Patients are always told the nature of their troubles, warned against infecting others, instructed in the care they must give themselves and the treatment required for a cure. In addition to this they are given a printed slip with the following instruction:

INSTRUCTIONS TO SYPHILITICS.

General Instructions:

Syphilis is contagious by direct and indirect contact, directly by open sores, external or internal, and indirectly by any conveyance of the excretions from these sores, upon clothing, knives, forks and spoons, glasses, shaving utensils, pipes, cigar and cigarette holders. All such articles should be sterilized after use.

You should absolutely abstain from the following: Sexual intercourse, kissing, smoking, chewing and all alcoholic stimulants. Syphilis is not always a venereal disease and is often contracted innocently through other sources.

You should not marry until your physician gives you permission. If you are married and acquire the disease, you should not have intercourse or kiss your wife or children.

TREATMENT.

Syphilis is Curable:

The cure of this disease depends upon you and your faithfulness to the treatment outlined. The earlier you come to your physician, the more easily it is cured. You are not cured when symptoms disappear; it is still in your blood. You should still remain under the observation of your physician and have your blood tested periodically for three years. You can be cured, allowed to marry and have healthy children.

Treatment does not injure a healthy mouth, therefore keep your mouth healthy by cleansing your teeth and gums after every meal.

Harper Hospital with all its modern equipment throws open its doors and stands ready at any time through its medical staff and nurses, to assist you in stamping out your disease.

This leaves them no excuse for neglect on account of ignorance but many patients temporarily financially stranded leave the clinic and are treated by private physicians. We are, of course, unable to keep track of these as they are beyond our jurisdiction and are unable to say how their treatment is continued. The most difficult part of the treatment of luetics is to have them take treatment when they feel well and have no symptoms. The method used to follow up these cases to have them return for treatment is described elsewhere.

Since these methods have been in use we are finding many cases that are giving persistent negative Wassermann tests for several months at a time; many have had no symptoms except the primary lesions; many have been rescued from incorrect and insufficient treatment and been made useful and able to support themselves and families; many have been treated by order of the juvenile court who would otherwise have

been almost hopelessly invalided and dependent.

We aim to make the treatment of syphilis at Harper Hospital as complete as possible and we think we can promise a cure provided the patient comes to us early in the infection and is willing to continue treatment as long as required.

While working independently we have found that our methods conform practically without exception to the requirements for Genito-Urinary Clinics adopted by the New York City Associated Out-Patient clinics[1] which read as follows:

1. The treatment of syphilis, whatever its manifestation, should be conducted in one department, which shall be either a special department of syphilis or the dermatological department.

2. Whatever the nature of the lesion, such as eye, throat, etc., has directed the patient to a department other than that for syphilitics, the treatment should be conducted jointly by the two departments, but the anti-syphilitic treatment be administered in the department of syphilis or the dermatological department.

3. Every department for the treatment of syphilis should be provided with a dark-field microscope.

4. Facilities for making the Wassermann test should be provided, if possible, in every institution where syphilis is treated.

5. Wherever laboratory facilities for making the Wassermann reaction test are not available at the clinic, provision should be made for the prompt conveyance of the specimens to the department of health or other place at which the examinations are made.

6. The principle of limitation of the number of patients in each clinic should be adopted, such limitation to be based upon the estimated facilities in men and equipment of each clinic.

7. Intravenous medication may be administered to suitable ambulatory cases of syphilis.

8. The association recommends that a suitable uniform circular of instructions be given to every syphilitic patient at the dispensary.

One of the difficult problems in the care of luetic cases in an out-patient clinic has always been the failure of patients to continue long enough under treatment to receive substantial benefit. Time and money is wasted and the efficiency of the dispensary is greatly diminished if the patients fail to return regularly or cease entirely after one or two visits.

With the large number who daily visit the dispensary, it is manifestly a physical impossibility for the individual physician to bear all in mind and unless some systematic follow-up plan were devised, a large proportion of cases would inevitably be lost. Failure on the part of the patient to recognize the gravity of his malady or to appreciate the necessity for persistent and long continued treatment, even though he may not feel ill, makes it necessary that the social worker should not lose sight of the individual.

If the desired results are to be obtained through the mercurial and salvarsan treatment it is imperative that we adopt some plan for intensive follow-up work if we wish to retain control of the case through the long period of treatment required. Anything short of this will spell failure. To save men and women from the human scrap-heap, to keep them efficient and self-supporting is a financial economy to the community. Realizing the expensive social results if syphilis and gonorrhea remain without treatment, the social worker is keenly awake to the necessity of increasing the efficiency of out-patient clinics.

Because of ignorance on the part of the general public as to the nature and prognosis of syphilis and the widespread belief that once syphilitic always syphilitic, social-workers as well as physicians must serve as educators, placing emphasis on Dr. Osler's assertion that "in general, the prognosis for the average case is good with careful treatment and bad without it."

When properly instructed, people will be willing to face the truth, if they have syphilis, just as they have learned to face without despair the knowledge that they have tuberculosis.

To this end a little booklet has been written in simple language which the lay person may readily comprehend, treating of the nature of syphilis, and of certain well defined rules to be observed and the necessary precautions to be taken. A copy is given each person under treatment. If the patient is unable to read the English language, the subject matter is translated for him.

The present success of hospital social service is due to the personal relationship which it has been made possible to establish. The value of the personal element and the personal touch cannot be overestimated. If the patient is made to feel that his presence is very earnestly desired in clinic, that someone is genuinely interested in helping him to get well and that it

1. A Survey of Venereal Clinics in New York City. Barringer & Platt, Social Hygiene, June, 1915.

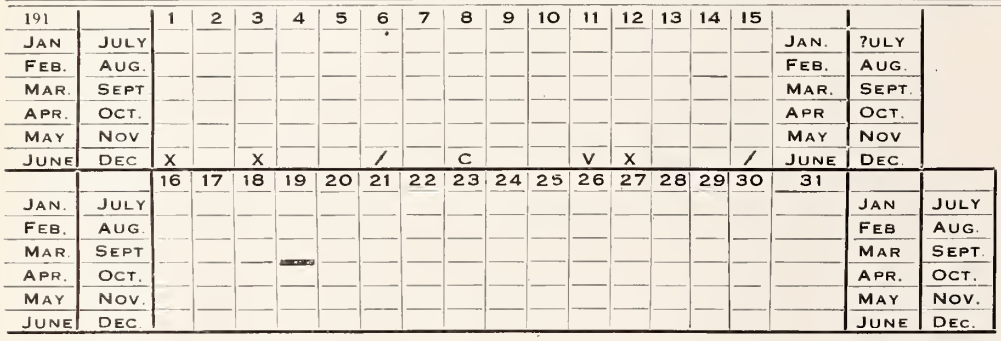
is a matter of real disappointment if he does not attend regularly and follow instructions implicitly, he is usually ready and willing to conform to requirements.

There is not a clinic in our Out-Patient Department which does not number a large percentage of luetic cases among those treated. In our Department of Dermatology and Syphilis an effort is always made to bring all affected members of a family under treatment simultaneously.

Aside from the regular card system in use for all patients a special card index is used similar to that of the Boston Dispensary.

Not infrequently we find that through ignorance or indifference parents are unwilling to bring their children for treatment. When the future well-being of the child is threatened, it becomes the office of the social worker to bring this matter before the Judge of the Juvenile Court. As a result there is always a number of wards of the Juvenile Court under treatment for lues or gonorrhea in our clinics and the hospital service.

Through this intensive follow-up service we hope to save many men, women and children from chronic invalidism and in this connection



Each card provides for a record of a two year treatment. One card is kept on open file in an "Index Visible" filing case and a duplicate card is given to the patient.

The physician indicates by a stroke of the pen on which date the patient is to return. The social worker marks a similar memorandum on the card on file. When the patient returns with his card the physician makes a second stroke forming a cross and marks the date for the next visit. If he fails to report on that date, a postal card is sent and the letter "c" is inscribed on the card in red ink. If he still fails to respond a visit to the home is made by the social worker and the letter "v" is marked in red ink. Under this system the percentage of "lost cases" is greatly reduced. If it becomes necessary for a patient to leave the city while still in need of treatment, the social worker endeavors to place him in touch with a clinic or a private physician in that city.

HARPER HOSPITAL

SOCIAL SERVICE DEPARTMENT

Dr. is anxious to know.....

present condition. Please call.....

at the Dispensary at.....on.....and present this card.

it is hoped that we may soon be able to hold an evening clinic.

It is exceedingly difficult and often impossible for the wage-earning man or woman to attend a day clinic. It means the loss of half a day's pay which is usually meagre enough when working full time. If this absence is repeated as often as is necessary it frequently means the loss of the job itself. Therefore, the case which might easily have been cured in its incipiency, leaving no permanent ill-results, goes without treatment until so far advanced that the patient is forced to give up work and the prognosis is unfavorable.

Private medical practice, of high standard, is too costly to be available for more than the well-to-do classes. The treatment of syphilis and gonorrhea has always been expensive but recent advances in modern medical science has rendered it more so. The well equipped dispensary serves to bring modern medical science within the reach of all and evening clinics would tend largely to put an end to treatment by quacks or to self-treatment from the corner drug store.

TRANSACTIONS

OF THE

Clinical Society of the University of Michigan

Stated Meeting, December 1, 1915

The President, UDO J. WILE, M.D., in the Chair
Reported by REUBEN PETERSON, M.D., Secretary

CYSTIC TUMORS OF THE ABDOMEN WITH REPORT OF THREE CASES.

WALTER A. HOYT, M.D.
(From the Surgical Clinic, University Hospital, Ann Arbor, Michigan).

The object of this paper is not a review of the literature, but an attempt to emphasize the more important points in diagnosis of the most common cystic tumors of the abdomen namely; (1) hydatid cysts of the liver, (2) pancreatic cysts, (3) omental cysts, (4) hydronephrosis, (5) ovarian cysts. Cysts of the spleen because of their rarity are not considered.

CASE 1. Clara M. age 6 years, American, entered the University Hospital July 15, 1915 because of enlargement of the abdomen.

Family History.—Negative except for history of cancer on the maternal side.

Personal History.—Negative except for measles with good recovery. No history of hemophilia.

Present Trouble.—About three years ago in April, 1912 the patient fell down stairs, sliding on the abdomen. She complained of pain that day but was up the following day. The patient was constipated for several days and was not relieved by cathartics. A few days later she was seen by a physician who made a diagnosis of appendicitis with peritonitis, but no operation was performed. The patient was sick for three weeks with fever, prostration, nausea and vomiting, and at the close of this attack with edema of the lower lids. This latter sign passed away in a few days. Casts in the urine were present. As the attack disappeared her mother first noticed a tumor of the abdomen of about present size. Since, there has been no marked increase in the size of the abdomen. After catharsis the mass becomes smaller but has never completely disappeared. Sudden jarring causes pain. The patient has lost some weight. The appetite is good; there are no night sweats, no jaundice and no swelling of ankles. No blood has been noticed in the urine. The patient has never complained of severe pain nor inconvenience from the tumor.

The urine examination is negative. Blood examination; 90 per cent., reds 5,350,000, whites 6,300. Differential count and smears negative. Wassermann examination negative.

Examination.—Well nourished child, negative except for the abdomen. Examination of the chest is negative. On inspection of the abdomen a swelling is noticed arising from beneath the left lower ribs and left flank, extending beyond the median line, and about two finger breadths below the umbilicus. This swelling is symmetrical and does not move on respiration. Palpation reveals a smooth tumor mass cystic in character which moves but slightly, except laterally. Percussion shows tympany above and to the right of the tumor, dullness extending toward the spleen and kidney. There is some tympany above the pubis. There is no fluid wave and no change of percussion on change of position. Auscultation is negative. Inflation of colon shows increase in tympany above and to the right although none is present along the left of the mass. Rectal examination is negative.

Treatment.—The patient was admitted to the Genito-Urinary Clinic for tumor of the left kidney. On account of the age of the patient cystoscopic examination was not made. An exploratory incision was made, however, over the left kidney and this organ was found to be normal. The patient was then transferred to the General Surgical Department and

the condition diagnosed as cyst of the omentum, pancreas or spleen. Operation August 6, 1915 through a right rectus incision revealed a large tumor mass adherent to the omentum and abdominal wall, the origin of which could not at first be determined. The mass was aspirated and a brownish fluid material removed. The cyst was then opened and a large amount of fluid and organized blood clot removed. The lining of the cyst was enucleated from the surrounding peritoneum, and it was then found that the cyst was omental in origin. The surrounding part of the peritoneum was brought together with a purse string of catgut, and a rubber tube inserted. Further examination revealed a second cyst in the lower left quadrant originating from the omentum. This was ligated with catgut and removed. The large cyst when filled was about seven and a half inches long, four inches wide and four inches thick. Pathologic report: "Cyst has dense hyaline wall bordering on cavity filled with organizing blood clot containing much pigment."

The patient left the Hospital on the twentieth day following the operation with the wound completely healed; recovery uneventful.

CASE 2. Mrs. K. age 39, married, Russian, entered the University Hospital November 22, 1915 for tumor of the abdomen.

Family History.—Her father died at the age of 72 from tumor of the breast. Her mother died at 71 of stomach trouble.

Personal History.—The patient has no knowledge of children's diseases. There has been no definite illness except headache. She has lost fourteen pounds in three years. The health is generally good and at present she has a good appetite and sleeps well. She has been in this country for about fifteen years. The patient has three children living and well and three dead, one dying of throat trouble one of scarlet fever and one of pneumonia.

Present Trouble.—The present trouble began five years ago with sour stomach and nausea, the condition being diagnosed as stomach trouble. At this time there was first noticed a small mass in the upper abdomen to the right of the median line beneath the rib margin. When first noticed it was only the size of a walnut and has gradually grown to the present size. The patient now has no symptoms whatever except slight tenderness on pressure over the mass. She has never been jaundiced; there have been no night sweats. There is no vomiting and the bowels are regular.

Urine examination negative.

Blood examination shows eosinophilia and secondary anemia.

Examination.—Inspection shows an enlargement of the upper abdomen arising beneath the right rib margin and extending downward nearly to the umbilicus, and filling the upper half of the abdomen. The mass moves on respiration. Palpation reveals a smooth movable tumor with a small nodule below about the size of a hickory nut. The size is estimated to be about as large as a cocoanut. Percussion shows flatness continuous with that of the liver with tympany below and to the left of the mass. No thrill or wave is present on examination. Auscultation is negative. Pelvic examination shows pelvic inflammation. The mass has no definite connection with the pelvis. No X-ray examination was made and the colon and stomach were not inflated. A diagnosis of omental or hydatid cyst was made.

Treatment.—Operation December 1, 1913. The abdomen was explored through a right rectus incision. On opening the abdomen the anterior surface of the liver appeared in the wound which later proved to be the left lobe. To the right of this could be felt a rather large gall bladder which emptied easily. The left lobe of the liver was very thin and attached to the inner side of this lobe was a mass the size of a large cocoanut. On the right and inferior border of this was another nodule about the size of a walnut, the liver was enlarged and there was a few adhesions to the omentum. The mass was cystic and extended back to the base of the liver, and over its surface were numerous nodules. A diagnosis of hydatid cyst was made. The surrounding tissues were packed off and the cyst opened. The latter contained a colorless fluid and several hundred small growths, white circular masses containing semi-fluid material. They varied in size from the size of a pin head to that of a hickory nut. These were removed and a large drainage tube inserted, the neck of the cyst being sutured to the parietal peritoneum.

Pathologic diagnosis, "echinococcus cyst." Examination shows the typical picture of the daughter cyst. The cyst was irrigated daily with ½ per cent. formalin and glycerine solution. The condition improved, but at the patient's discharge there was still a small fistula although very little discharge. Two unavailable efforts have been made to ascertain the present condition of the patient.

CASE 3. Mrs. M. age 37, housewife, Scotch, entered the Gynecological Clinic on July 15, and transferred to Surgery July 20, 1915.

Chief Complaint.—Mass in the abdomen.

Family History.—Negative except for some tuberculosis in the family.

Personal History—Practically negative. Eight children all living and well. Operation for lacerations after first childbirth.

Present Trouble.—About one year ago the patient noticed a hard mass just above the umbilicus. This caused no symptoms. Two months ago while consulting her physician for jaundice a tumor about the size of two fists was found slightly to the right in the upper abdomen. Since that time the jaundice has disappeared but the mass has increased in size rather rapidly. The patient has never had any pain, no loss of weight, no diarrhea and there is no history of injury.

Blood examination negative. Wassermann examination negative. Urine examination; albumen and granular casts. Functional test on kidneys 38 for two hours. Examination of the stools negative, fat not present. Blood pressure 110.

Examination.—There is a symmetrical swelling in the median line extending to the left side. This mass arises from under the ribs and extends below the umbilicus. Palpation reveals a smooth tumor which fluctuates and is apparently cystic. Dullness is found on pressure with tympany above and below. The mass is not movable and does not move on respiration. Inflation of the stomach and colon shows some obliteration of the dullness, the distended colon being below and the stomach well under the ribs and to the right. Cystoscopic examination was negative. X-ray examination showed two normal kidneys with no indications of stone. Bismuth injection of the stomach and colon gives a shadow arising in the median line between the stomach and colon. The stomach is displaced up under the ribs and to the right. The colon is distended and shows evidence of obstruction at the splenic flexure. Pelvic examination shows a movable uterus and appendages with a slightly lacerated cervix and perineum. The condition was diagnosed as a cystic tumor arising from the pancreas or spleen.

The patient was operated upon July 26, 1915. A median incision revealed a large cystic mass about six inches in diameter. The stomach and pylorus were attached along the upper border. At the pylorus was a softened area suggesting imminent rupture. The tumor had its origin in the median line between the stomach and the colon and was entirely separate from the kidneys, spleen and liver. A diagnosis of pancreatic cyst was made and a trochar passed into the tumor and the fluid removed. Removal of the cyst was deemed inadvisable and after emptying its contents the cystic cavity was washed out with a 1 per cent. formalin solution. Drainage of the sac was secured by a surgical pack and a small rubber tube. The cyst wall was then sutured to the parietal peritoneum, and the abdomen closed.

The patient left the hospital twenty-seven days after operation, a small sinus still persisting. A letter from the patient received one week ago states that the sinus is completely closed and that the patient is five and a half months pregnant.

The case histories of these different varieties of cysts are striking in their similarity. The patient usually gives a negative history up to the time the tumor is palpable and until symptoms are caused from mechanical reasons. In pancreatic and omental cysts there is very commonly a history of injury to the abdomen a few days to several years previously. The case of omental cyst (Case 1) reported in this paper illustrates this point. The fact that these cases are practically symptomless for so long a period will account for the late operative interference. Reports of small pancreatic, hydatid or omental cysts are not found in the literature except where the conditions were accidentally discovered in routine exploration. A slow symptomless growth is the rule in all of these cases, therefore, the history is of no great significance. Often a history of the patient coming from a northern country, Russia or Iceland where the inhabitants are in close relationship with dogs, is of importance as in the hyadid cyst reported, (Case 2).

After the cystic tumors have become of sufficient size to be palpable and visible, it is important to ascertain where the mass first made its appearance. Hydatid cysts usually appear on the right side of the abdomen beneath the edge of the liver in contradistinction to pancreatic cysts which appear as a rule in the medium line above the umbilicus. Ovarian cysts rise out of the pelvis in the median line, while kidney cysts arise from either flank, later extending across the median line toward the pelvic or liver margin. There is nothing constant in the place of appearance of an omental cyst.

Pain likewise is not always present or constant. However, there is often present in kidney cysts a history of early pain resembling renal colic with a partial or complete disappearance of the tumor. Any of these conditions

when the cysts have reached large proportions may cause pain by pressure, the location depending upon the organs pressed upon. Rather severe pain is often met with in pancreatic cysts through pressure on the celiac plexus causing reflex pain in the back and under the left shoulder. This pain with the accompanying nausea and vomiting has led to the diagnosis of intestinal obstruction in a few cases. If a hydatid or ovarian cyst becomes infected, the resulting pain may aid diagnosis. Pain in an omental cyst is rare even after it has reached a considerable size. Nausea and vomiting are rare except in cases of pancreatic and hydatid cysts. Jaundice is a frequent symptom of a pancreatic cyst, is sometimes present in hydatid cysts, but is rare in hydronephrosis.

The data of most diagnostic significance is derived from the examination of the abdomen and special examinations.

It is not possible in the limits of this paper to even outline the methods of abdominal examination. No part is so unimportant that it should be neglected, and the success of a correct diagnosis will depend to a large degree upon the attention paid to complete and routine inspection, palpation and percussion of the abdomen.

In conjunction with the history of the first appearance of the enlargement, the origin and general position may be determined by inspection. By a careful study of the consistency, shape, size and general contour of the tumor it usually is not difficult to determine whether the mass be solid or cystic. When this point is once settled the field of possibilities has been greatly reduced. In the case of hydatid cyst, the so-called "hydatid fremitus" obtained by tapping over the cystic mass is of diagnostic value. Unfortunately it is not constant and in the case reported, this condition was not found even though several attempts were made to ascertain its presence.

The presence of ascites as an independent condition or an accompanying complication is of course important. A varying degree of ascites may be present in either kidney, hydatid or pancreatic cyst caused by obstruction to the portal circulation. The failure to recognize ascites has been the cause of many mistakes in the diagnosis of ovarian cyst.

The determination of mobility is often helpful. It is to be remembered that the relative mobility of a cyst depends upon the relative mobility of the organ from which it has its origin. Hydatid and kidney cysts show some mobility on respiration in contrast to the other cystic conditions. It is to be borne in mind, however, that the formation of adhesions between a cyst and other organs, or the abdominal wall, renders valueless signs dependent upon mobility. No abdominal examination is complete without rectal palpation. By making the simple digital examination as a routine the surgeon will avoid many embarrassing errors in diagnosis.

By means of a careful cystoscopic examination and injection of the dilated pelvis or cysts of the kidney with thorium or collargol, followed by X-ray plates, a hydronephrotic kidney can be definitely diagnosed. This is of great aid in the treatment of the cysts under consideration, for while most of these cysts can be treated through an abdominal incision it is much safer to deal with hydronephrosis by the extraperitoneal route. This is of great diagnostic value in kidney cysts etxending into the pelvis and so often mistaken for ovarian cysts.

A thorough pelvic examination by an experienced surgeon is usually sufficient to confirm or disprove the presence of an ovarian cyst with the possible exception of a kidney condition and in conjunction with the cystoscopic examination this latter can easily be ruled out. The other cystic conditions under consideration very seldom simulate an ovarian cyst on pelvic examination.

The relations of the tumor with the inflated stomach and colon are often of value in diagnosis. An important general rule to be borne in mind is that abnormally movable viscera and tumors tend to be displaced in the direction whence they came, e. g. a movable kidney tends to resume its normal position, etc.

In the case of pancreatic cysts not attached to the anterior wall the previous dull areas after inflation of the stomach and colon may be completely replaced by the tympany of the over-riding and distended viscera. When by inflation it can be demonstrated that a cystic mass arises between the stomach and colon, the diagnosis of pancreatic cyst is almost certain, since the majority of such cysts appear between these structures. It is to be remembered, however, that cysts of this organ may appear above the stomach or below the transverse colon. On the other hand, in the case of hyatid cysts, we usually find the stomach and colon below and to the left of the tumor.

In kidney cysts the distended colon lies over the tumor or to the inner side, while in omental cysts there appears a collar of distended colon about the mass. Ovarian cysts seldom have

intestine over them and the distended stomach lies above the cyst or under it. Large cysts of the spleen lie over the colon with the stomach above and to the right.

The various laboratory tests have their place but may or may not be of diagnostic value. In hydatid cysts, as a rule, on differential blood count an eosinophilia along with a secondary anemia will be found present. In the other conditions there is nothing unusual. The presence of blood, albumin and casts may prove of great help in the diagnosis of hydronephrosis. It must be borne in mind, however, that these abnormal constituents may be absent entirely, and that albuminuria is not uncommon in hydatid and pancreatic cysts brought about by pressure on the kidneys or uterus. The presence of fat in the stools is important in the diagnosis of pancreatic cysts, but unfortunately this sign is absent in a large proportion of cases.

The differential diagnosis of different intra-abdominal conditions has been greatly aided by the great advances in Roentgenology from which much more may be expected in the future. The greatest advance has been made in the diagnosis of kidney conditions, relatively few observations having been made as to radiographic pictures in the case of the other abdominal cysts. The X-ray, however, has its place and is useful in confirming the results of inflation of the stomach and colon. It has the advantage too of showing the displacement of the abdominal viscera.

The diagnostic aspiration of these cystic tumors is distinctly contraindicated. It is in the highest degree dangerous to introduce an aspirating needle through the abdominal wall into a cystic abdominal tumor not adherent to the parietal peritoneum for the purpose of determining its contents and character. Not only may intestines be punctured, but irritating and infectious material from the cyst itself may be distributed throughout the abdomen. In very few cases, except kidney and hyatid cysts, are such diagnostic punctures of any value. Aspiration should not be carried out unless followed immediately by laparotomy, and if laparotomy is to be performed the preliminary procedure is of little value.

With our present methods of diagnosis of abdominal tumors, we can say that mistakes in the diagnosis of ovarian and hydronephrotic cysts should seldom be made, but in the case of the other abdominal cysts especially where the tumor practically fills the abdomen the

CHART SHOWING SYMPTOMS AND SIGNS OF CYSTS OF THE ABDOMEN.

	Injury	Jaundice	Early Appearance	Pain	Movement on Respiration	X-ray	Urine	Inflated Stomach	Inflated Colon	Blood	Stool
OVARIAN	—	—	From pelvis mid line	— Unless infected	—	+ or —	—	Above	Above	Negative	Negative
HYDATID	—	+ or —	Beneath liver	— Unless infected	+	+ or —	Albumin	Below and right	Below	Eosinophilia Sec. anemia	Negative
PANCREATIC	+ or —	+ or —	Median line above umbilicus	+	—	Helpful	Sometimes Albumin	Above usually	Usually below	Negative	Fat not constant
OMENTAL	+	—	Nothing constant	—	—	Helpful	—	Above	Around tumor	Negative	Negative
KIDNEY	—	Very seldom	Either Flank	+	+	Diagnostic	Albumin casts	Median and above	Over or median	Negative	Negative

diagnosis may be doubtful even after a most thorough study of the case.

How then should these cases be handled? A most complete and routine examination of these conditions should be made taking particular care to rule out cysts of the kidney and conditions other than cystic in nature. If a positive diagnosis of hydronephrosis is made, the extraperitoneal route is to be preferred. Since the treatment of the other cystic conditions is purely surgical and best carried out by an abdominal section, the surgeon is justified in performing such an operation, even though a positive diagnosis is not possible.

DISCUSSION.

DR. CYRENUS G. DARLING: There is one type of cyst that has merely been mentioned, but no specimen has been presented, that is, a cyst of the spleen. I had the good fortune a number of years ago to have such a case in a girl 16 years of age where there was a cyst associated with the spleen which contained seven pints of fluid. There was no history of injury in this case and it seemed to have developed shortly after an attack of measles, but whether there was any relation between the measles and the cyst of the spleen I am unable to say. The tumor filled the whole left side of the upper abdomen to below the umbilicus and pressed upward against the diaphragm in such a way as to limit its motion. There were some adhesions which tended to hold it in place. The cyst had apparently developed from the lower border of the spleen and was of the non-infectious type. I removed both spleen and cyst since it seemed impossible to remove the cyst alone without great danger of hemorrhage. It was the seventh case reported in this country at the time that I operated, although since that time there have been a few other reported cases.

You will notice that in the omental and the pancreatic cyst, and the one I have just mentioned, the fluid was apparently due to hemorrhage and that in all of these cases the origin was probably traumatic. In the development of these cysts we have the formation of a wall either from the layer of peritoneum outside of the organ itself or developing from the peritoneal covering of that organ; in the omental cysts from the peritoneal covering; in the cysts of the pancreas also probably developing from the peritoneal covering; and the cyst enlarges as the fluid increases.

There may be some doubt as to the method of treatment in these cases. Two methods have been mentioned here, one of draining the cyst and the other of completely removing the cyst wall, and in the case of the spleen removing the organ from which the cyst arose together with the latter. If we knew what the relations of these cysts were to the deeper bloodvessels, perhaps all of them could be removed, but the danger of encountering severe hemorhage in a locality where it would be difficult to control makes it better in most of these cases to evacuate the contents and then treat the cyst in such a way that the fluids will not form again. In the case where the cyst was entirely removed we started out to remove a portion of the wall and finding it separated easily we continued until it was entirely taken out. Many of these cases could probably be treated in the same way if we could always be sure that serious trouble would not be encountered. The echinococcus cyst is so close to the liver and the inflammation is so marked that the cyst is usually left behind and treated by injections which destroy the material which otherwise would lead to a continuance of the condition.

The diagnosis of the cyst of the spleen may be easily made, provided the spleen remains in its normal position, but many times the cyst develops in a movable spleen situated low down in the abdomen. It is not always easy to make a diagnosis of cyst of the spleen even when the latter organ is known to be displaced; in fact a number of instances of mistakes in diagnosis have been reported.

An ovarian cyst may sometimes present serious complications. I might mention a case which occurred some years ago where a patient entered the Surgical Clinic with the history of having been operated upon in a Chicago hospital for tuberculous peritonitis. She was referred to the Hospital under the supposition that the abdominal cavity had refilled from the same disease. There was also a large ventral hernia. I opened this abdomen and found a large amount of gelatinous-like fluid in the abdominal cavity. After removing as much of this as possible, I encountered a ruptured ovarian cyst. The resulting inflammation had formed such marked adhesions all around this cyst that I thought the safest way would be to stitch the opening of the cyst to the abdominal wall and wait until the inflammation subsided. I did this and some two or three months later removed the ovarian growth. This patient made a good recovery, went home and two years later returned with another cyst of the same nature which had formed on the other side.

After these cysts rupture into the abdominal cavity the diagnosis is rather difficult before the abdomen is opened although comparatively simple after the incision is made, the tumor palpated and some of the contents aspirated. The great danger in using the aspirator before incision to confirm the diagnosis lies in the fact that fluids, like material from an echinococcus or pancreatic cyst may contaminate the peritoneum. We never are sure in examining cysts of the upper abdomen that one or the other of these cysts may not be present.

DR. JAMES G. VAN ZWALUWENBURG: Dr. Hoyt has been kind enough to refer to the X-ray as a helpful method in diagnosis. I think he is rather overestimating the value of such examination because in each one of the cases he has enumerated the X-ray diagnosis was of no more value than the clinical diagnosis.

In the case of abdominal tumors, the amount of information which can be secured with the X-ray is only limited by the amount of time, pains and material you desire to spend on the patient. Ovarian cyst has been differentiated from ascites by the X-ray in our own clinic. The diagnosis of hydatid cysts by the X-ray has been reported in the literature several times. Pancreatic and omental cysts unless unusual conditions be present are characterized by the displacement of other organs. In kidney cysts it is diagnostic. A large hydronephrosis usually cannot be shown because it does not become large

unless it is "a closed hydronephrosis" and then it is impossible to inject the kidney. In that case the tumor mass may be shown. It takes usually more than one observation and more than one method and very frequently we have to wait for the bowels to be clear between examinations before we can utilize another method of examination.

Dr. Harry M. Malejan: In looking over some of the old records in the Surgical Clinic, I came across a case of a professor in the University who was operated upon for echinococcus cyst of the liver. This gentleman had visited Italy for a year or two and contracted the disease over there. Hydatid cyst is very common in the Levant and Egypt and almost every country in the Mediterranean basin. It was mentioned that you find cases of hydatid cysts in the northern countries, Russia, Iceland, Labrador and Alaska. We all know that it comes from close association with dogs and for that reason we must always bear in mind hyatid cyst in people that come from those countries.

Dr. Hoyt: I have just one more point to make about pancreatic cysts. There has been a line drawn between the true pancreatic cysts and the so-called pseudo-cysts. Although the latter appear between true pancreatic cysts and the so-called pseudo-cysts. Although the latter appear the lesser cavity and usually follow an injury and are nothing more than very larye hematomata. They occur rather rapidly following an injury. In the case of the pancreatic cyst which was reported, the pathologic report came back "hematoma with no definite pathology to show its origin." We might have been dealing with just such a condition in that case.

SOME EXPERIMENTS IN LUNG SURGERY.

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Although much experimental work has been done upon the surgery of the lungs and some operations of this kind have been successfully performed upon man, it still continues to be a dangerous field for surgery and some facts may yet be discovered experimentally which will prove of practical value in performing these operations upon man.

The experimental work which forms the basis of this paper was done by means of Meltzer's insufflation apparatus in which the pressure was furnished at first by the operation of a pair of bellows and later by means of compressed air.

The use of intratracheal insufflation to maintain an adequate pressure of air while operating upon the thoracic organs has been known since the time of Vesalius who in 1560 discovered that he could prolong the life of an animal after opening its thorax to study the motions of the heart by blowing through a tube introduced into the trachea.

Robert Hook on October 29, 1667 delivered an address before the Royal Philosophical Society in which he showed that the respiratory movements were simply for the purpose of bringing about a supply of fresh air to the lungs. He experimented upon a dog, opened its chest and kept it alive by blowing air into its lungs by means of bellows, occasionally permitting the lungs to collapse and then distending them. Upon ceasing the blast the dog would fall into dying convulsive fits but revived again upon inflating the lungs.

During the latter part of the eighteenth century the bellows were generally used in England to resuscitate people who had been drowned and it was then known that there was danger of over distension of the lungs if the blast was made too vigorously.

Desault in 1790 introduced a rubber catheter into the trachea in order to relieve difficult breathing due to stricture of the larynx. In 1827 Le Roy pointed out that if a very high pressure were maintained with the bellows it might result in emphysema and death. The use of an intralaryngeal tube for croup was described by Bouchut in 1857-58, and O'Dwyer of New York described his intubation apparatus for diphtheria in 1885. In 1887 Fell of Albany described his method of artificial respiration by means of a pair of bellows and a tracheotomy tube. Francois Frank brought out two forms of positive pressure apparatus in 1896. In the same year Quenu and Longuet made a positive pressure apparatus and Tuffier advocated insufflation in operations upon the pleural cavity. This was tested experimentally upon animals and clinically in operations upon man in the hospitals of Paris. In Quenu's apparatus the head was placed in a chamber which resembled a diver's helmet. Compressed air and chloroform were used for the insufflation. In 1900 Matas employed the Fell-O'Dwyer method in intrathoracic surgery.

In 1904 the attention of experimenters in intrathoracic surgery was somewhat diverted from the use of positive pressure by the researches of Sauerbruch of Germany. The latter, following the advice of Mikulicz had done considerable experimentation with the object of overcoming the ill effects of pneumothorax during and after intrathoracic operations by the use of negative pressure. Woillez in 1875 had already invented his "Spirophore" which made use of negative pressure. Sauerbruch enlarged the "spirophore" at first to the size of a small cabinet just large enough for operating upon dogs and later on into the form of a

cabinet large enough for operations upon man. As a result of much experimentation upon dogs Sauerbruch concluded that positive pressure produces numerous disturbances in the normal circulation in the lungs. Brauer (1904) and Seidel (1907), however, found that the changes were so slight as to be of no importance when only enough positive pressure is used to prevent pneumothorax. Cloetta (1910-1913) made some experiments with a special lung plethysmograph to determine the effects of positive and negative pressure upon the circulation in the lungs. He resected the chest wall and placed the lungs in a glass plethysmograph and stopped the respiratory movements by the use of curare. In this manner he proved that if the lung is distended to the same degree exactly by positive and negative pressure, one-third less pressure is required with the negative than with the positive or if the same amount of pressure is used in each case the lung will be more distended with negative pressure. Furthermore, he showed that with the same distension of the lungs, the aortic pressure falls more with positive pressure than negative and that the pressure in the pulmonary artery rises higher with positive pressure and there is an increased diastolic pressure in the right ventricle. A high degree of positive pressure results in compression of the lung capillaries. Experience has shown that a slight degree of positive pressure is not dangerous but high or long continued pressure may result in serious reflex disturbances in the lungs and deleterious effects upon the circulation, depending upon the reserve power of the right ventricle.

All animal experiments seem to show that total extirpation of one lung has a higher mortality with positive pressure than negative, because the pressure of air in the empty pleural cavity which cannot be entirely driven out prevents the collapse of the chest wall and change in position of the diaphragm, mediastinum and sound lung which is necessary for recovery. These facts have been well established by experimental evidence. Block, Gluck and Schmid made researches of this kind in 1881. Biondi in 1884 obtained four recoveries in fifteen operations. Mayer of Brussels reported two recoveries in seventeen total pneumectomies on dogs. Janeway removed one entire lung in five dogs with recovery, using positive pressure. Sauerbruch and Haecker, using positive pressure, lost thirty-four dogs out of thirty-eight in their first series of experiments. The extirpation was done through one intercostal incision. Eleven died of leakage from the bronchial stump, five from primary infection at the time of operation and eighteen from the pressure resulting from pleural exudate. In the second series of twelve dogs, eight died.

Robinson in 1908 reported a series of thirty thoracic operations on dogs by means of his positive pressure apparatus. In this series there were nine deaths and twenty-one recoveries. There were nine simple pleurotomies with two deaths and seven recoveries. One experiment was merely the application of the positive pressure without opening the thorax to demonstrate whether the method of anesthesia was dangerous in itself and this ended in recovery. There were nineteen excisions of the lung with seven deaths and twelve recoveries. Another experiment consisted in clamping and releasing the lower lobe of the lung and ended in recovery.

Willy Meyer under a combination of positive and negative pressure performed twenty-one total excisions of the lung with seventeen recoveries. Removal of one or more lobes was done six times with five recoveries. In a series of twenty-four cases there were twenty-two recoveries. At one time twelve dogs were operated upon without a single death. Giertz operating with positive and negative pressure, used a flap of the fascia lata for covering the wound in the lung after resection and had eight recoveries out of ten operations upon large dogs. In rabbits there were no deaths. Robinson and Sauerbruch in 1910 found they got better results by resecting four ribs when a complete extirpation of one lung is done than if the operation is done through an intercostal space. The collapse of the chest wall thus obtained helps to close off the space left in the chest cavity thus tending to prevent pneumothorax but if a larger resection is done the animal may die because the operated chest wall offers no resistance to pressure within the sound lung, as a result of which the thin mediastinum is apt to rupture, resulting in a double pneumothorax

Schlesinger in 1911, using Meltzer's apparatus, did seventeen total pneumectomies with five recoveries. He generally found air in the pleural cavity postmortem in the operated side and sometimes in the unoperated side. Kawamura (1914) has successfully removed the entire left lung of dogs and in a few instances a part of the right lung also at a second operation. This was done by means of Shoemaker's positive pressure apparatus.

So far there have been sixteen cases of pneumectomy in man with eight deaths. Helferich, 1898, removed the middle and lower lobes of the right lung in man for sarcoma of the chest

wall. Heidenhein in 1901 removed the left lower lobe of the lung for bronchiectasis and this was followed by a fistula. Stretton in 1906 successfully resected the upper lobe of the right lung for tuberculosis. Robinson in 1912 removed the lower lobe of the left lung for bronchiectasis. Kümmell in 1911 removed the entire right lung from a man, 48 years old, for carcinoma. This patient died on the sixth day from edema of the lungs and tracheal rattling. Postmortem showed necrosis of the lung stump on account of the fact that the bronchi and vessels of the lung were clamped with forceps.

Resection of the lung is a very dangerous operation both on dogs and on the human being on account of the danger of pneumothorax and of the difficulty of making a hermetic closure of the bronchus and lung. Infection may also take place from the outside if the wound gapes open or drainage is used. Another source of infection of the lungs and bronchi may result from the presence of germs in the nose and throat which are driven inward by the insufflation apparatus. This is particularly true of dogs which are affected with distemper as may be seen from my experiments. Distemper is a nasopharyngeal catarrh occurring in dogs and caused, as Ferry proved, by the bacillus, bronchisepticus. The disease is accompanied by respiratory, abdominal and nervous symptoms and often results in death. It is the common presence of this infection in dogs together with their necessary confinement in laboratories, when accustomed to an out-door life, which lowers their resistance to surgical operations and makes the results of experimental surgery much less favorable than the same operations upon man.

The statistics of experiments in lung surgery with positive and negative pressure show much better results with the latter because it produces conditions closely resembling the physiological. Robinson and Sauerbruch in 1909 concluded that the space left behind after doing intrathoracic operations under negative pressure diminishes rapidly but that this is not the case in such operations done under positive pressure as most of the dogs died from the formation of an exudate. I found similar results in my experiments. Kawamura, however, found no exudate after his operations although be used Shoemaker's positive pressure apparatus. The great difficulty in these operations is to prevent pneumothorax and infeetion, both from the interior of the lung and the outside, without causing any damage to the histologic structure and circulation in the lungs.

Dogs are especially unfavorable subjects for these operations on account of the shock which results from exposure and loss of body temperature, their inability to stand pneumothorax well and their low resistance to infection in the pleural cavity. They bear peritoneal infection very much better as can be seen from the numerous successful abdominal operations that have been performed upon them. The pleuritic exudate which generally forms after these operations acts unfavorably because the normal circulation is important for the elimination of germs from the pleural cavity as was proved by Nötzel's experiments. This fluid is absorbed very much more slowly by the inflamed than by healthy pleura. Grober in 1901 thought that this slow absorption was due to the fact that the stomata are closed by fibrin and that the endothelium is damaged by the inflammation. The same is true of the absorption of air in pneumothorax. Dorpat in 1893 showed that 78 cubic centimeters of air was absorbed in twenty-four hours by a dog weighing 11.7 kilograms, but that it took four days to absorb 35 cubic centimeters of air when the pleura is inflamed.

The exudate which forms after a thoracotomy causes compression of the lung which has a bad effect upon its circulation and function. Secondary infection of the compressed lung may result in the formation of areas of pneumonia as may be seen from my experiments. Drainage is apt to be allowed by pneumothorax and secondary infection of the pleura. In experiment VI where the entire left lung was removed, the entire pleural cavity on that side was filled with a thick fibrinous coagulated exudate. This was nature's effort to overcome the bad effects of pneumothorax. Tiegel invented a drain which allows fluids to escape, but prevents the entrance of air or fluid into the pleural cavity. In the case of wounds of the lung in man, pneumothorax can be prevented by the use of Tiegel's drain and emphysema may be treated by aspiration according to Bier's method.

The peculiar anatomy of the dog's thorax gives it very little resistance to pneumothorax. In this respect it differs from the rabbit very much. The thorax in man offers considerable resistance to pneumothorax as in only about 5 per cent. of intrathoracic operations does it become necessary to use any apparatus to prevent pneumothorax. Surgeons have known this in the past because numerons operations have been done for empyema and lung abseess without the use of any differential pressure ap-

paratus. In chronic cases of empyema, owing to the formation of firm adhesions between the lung and parietal pleura and because of the fixed position of the mediastinum it is possible to resect portions of all the ribs of one side without danger to life. Children can usually stand extensive resections of the chest wall and lung because their relatively soft chest wall can readily contract and the diaphragm lies high so that the space which is left behind soon becomes closed off. Conditions in the rabbit are similar.

In the dog these conditions are entirely different as the animal will die in a few minutes if a wide opening is made in the chest without the use of differential pressure. In this animal the mediastinum is a wide, very delicate and transparent membrane and there is a mediastinal band extending from the neck to the diaphragm. On this account it is unable to resist any marked changes of pressure within the thorax without injury to the heart and pulmonary circulation. The thickness and rigidity of the mediastinum in rabbits enables them to stand pneumothorax for a long time. Although the operated lung and heart follow the mediastinum into the normal side of the thorax during inspiration, still the mediastinum gets into its normal position during expiration. In the case of the dog the mediastinum is so loose and delicate that it flutters up into the wound and often becomes perforated thus allowing air to get into the sound half of the thorax resulting in double pneumothorax. In consequence of this the pressure of the external air in the opened side of the thorax exercises dangerous compression upon the normal lung which is unable to drive the air out entirely even with the help of the diaphragm and the accessory muscles of respiration. Le Play and Mantoux showed that by induced pneumothorax they could render all but one-sixth of a dog's lungs atelectatic without causing death.

INTRATRACHEAL INSUFFLATION.

In 1910 Meltzer introduced his method of intratracheal insufflation for the purpose of maintaining a positive pressure within the lungs in order to prevent pneumothorax during intrathoracic operations. The technic of this method was established by a long series of experiments upon dogs. A soft rubber catheter is introduced through the larynx into the trachea after the patient has been thoroughly anesthetized. The lower jaw is propped widely open and the tongue is drawn forward until the epiglottis is recognized. The latter is then drawn forward with a long pair of curved forceps and the catheter passed along the forefinger until it enters into the larynx. The catheter should be provided with a terminal opening instead of a lateral one. After the catheter is introduced as far as it will go it is deeply in the right bronchus and it should be slightly withdrawn (about 5 to 6 centimeters) and secured in position so that it will not slip out of place. It should be determined whether the catheter is in the trachea or esophagus, as acute dilatation of the stomach will result if it is in the latter. This will prove fatal unless the air is removed from the stomach by disconnecting the catheter with the apparatus and making pressure over the stomach until the distension is relieved.

After the catheter is attached to the insufflation apparatus, ether mixed with air is blown into the lungs either by pressure upon a pair of bellows or by a connection with a compressed air apparatus. This apparatus is connected with a mercury safety valve which is set at 30 millimeters so that if the pressure in the apparatus exceeds that point the excess of air will bubble off through the mercury. The average pressure which should be maintained for intrathoracic operations upon dogs is 18 to 25 millimeters. The pressure in operations upon man may be raised to 35 to 40 millimeters. Meltzer considers it safe at any point below 50 to 60 millimeters. There is also a valve attached to the apparatus for the purpose of relcasing the pressure in the lungs about six times a minute for a period of two seconds at a time to prevent shock and damage to the lungs. This also relieves the obstruction to the flow of venous blood to the right auricle from the great veins of the chest and abdomen. The size of the French catheter varies from 18 to 24 or with a diameter of 8 millimeters and a lumen of 4 millimeters according to the size of the animal.

This method of anesthesia will not be accompanied by asphyxia if the catheter is of the proper size and the blood is well aerated. My experiments show that it does cause some damage to the alveoli of the lung. Severe shock and reflex disturbances are likely to follow this method of anesthesia if the pressure within the lung is maintained at a point higher than 25 to 30 millimeters.

Sauerbruch proved by animal experimentation that the breathing capacity can be reduced to one-tenth of normal without endangering the oxygen content of the blood. Spontaneous

breathing should take place at all times during the anesthesia.

Seidel showed that there is a fall in blood pressure upon interrupting the pressure in the lungs. This fall in blood pressure was equalized so that it returned to normal before the cessation of the interruption. The pulse curve also showed some irregularity.

Robinson reported in 1913 that intratracheal anesthesia had been used in 1402 cases with seven deaths. It is very useful in operations about the mouth, nose and throat as well as those within the chest, because blood and mucus cannot enter the glottis.

A series of pneumectomies were performed upon dogs at the Surgical Laboratory of the University of Michigan, using Meltzer's apparatus for intratracheal insufflation in order to determine whether there are any serious dangers connected with this method of anesthesia. The technic which was used in these operations was as follows: The field of operation was shaved on the day before the time set for operation. The dogs were given nothing to eat for twenty-four hours previous to the operation. A hypodermic of morphin gr. ¼ and atropin gr. 1/150 was given one-half an hour before the beginning of the anesthesia. This dose was doubled in the case of the large sized dogs. After placing the animal upon the table the field of operation was scrubbed with a sterile brush and soap followed by sterile water, acetic acid and alcohol then sterile water again followed by a solution of bichloride of mercury 1-1000.

After the animal was completely anesthetized the catheter was introduced through the larynx into the trachea until it met an obstruction, then it was withdrawn about five centimeters and attached to the insufflation apparatus. The same aseptic technic was followed in these operations as is customary in any major operation upon man in a modern hospital. Following is a description of these operations.

Experiment I—April 14, 1913.

Excision of a portion of right lung.

Result: Recovery.

Catheter introduced through larynx into trachea by Dr. Lilly after the dog was anesthetized with ether by the open method by Miss Davis. We were not able to maintain a continuous pressure of 25 millimeters of mercury as recorded in the manometer connected with the apparatus. A leaky valve was found and repaired but still the pressure was not well maintained by means of the foot bellows which were used for producing the pressure. The catheter was evidently too small for the size of the trachea. The mouth was packed with cotton in consequence of which the pressure was better maintained during the remainder of the operation. A portion of one rib was resected and the lower lobe of the right lung brought into the field of operation. The lung was held in position with a large pair of intestinal clamps, the ends of which were covered with rubber tubing. The wound in the lung was sutured with black silk upon a round needle, care being used to cover all the raw surface with the serous coat or visceral pleura. A rubber drainage tube was inserted and sutured to the pleura, intercostal tissues and skin with linen thread. A rubber dam was placed over the tube and its edges sutured to the skin in such a manner that fluid could escape from the pleural cavity without air entering, thus preventing post-operative pneumothorax. A dressing of gauze and laparotomy pads was held in position by means of a many tailed bandage. There was some dyspnea following operation but it was not severe.

April 15, 1913—Dog breathing quite easily, respirations not greatly increased in frequency. The dressings were found saturated with serous fluid, the wound was cleansed with a 1-1000 bichloride solution and sterile dressings applied.

April 17, 1913—Rubber dam has disappeared. Infection and suppuration of the entire wound with separation of the edges of the skin. Fresh dressings applied. Dog is in a good condition and is able to walk around and drink water.

May 7, 1913.—Dog doing well, fistula nearly closed, some shortness of breath on affected side.

June 2, 1913.—Fistula entirely healed and the dog fully recovered from the operation. The dog was killed with cholorform at this time because he developed a lumpy jaw infection.

In this case we have the rare good fortune to have a recovery after a pneumectomy despite the fact that an empyema developed. Adequate tube drainage prevented the empyema from becoming fatal.

Case II. Operation, May 29, 1913.

Excision of one lobe of right lung.

Result: Death from empyema in five days.

Catheter introduced by Dr. Lilly. A portion of one rib was resected and the lower lobe of the right lung removed. At one time the dog came near dying, marked cyanosis of the lung tissues was noticed and the pressure went down to ten millimeters. It was due to a wrong position of a stop cock which did not allow enough air to pass through. This was fixed and the pressure maintained at 25 millimeters afterwards. Tube drainage covered with

a rubber dam, as previously described for Operation I, was used. Dressings and bandage applied. This dog died of empyema at the end of five days.

CASE III. Operation. Excision of lower lobe of left lung.

Result: Death in two days.

Object: To attempt the operation without the use of tube drainage. December 16, 1913. Miss Davis gave anesthetic. Catheter introduced into the larynx and connected with the Meltzer apparatus. The left side of the chest was opened by means of Kocher's incision. Twenty millimeters of pressure was maintained as recorded in the apparatus. One rib resected. The mediastinum bulged into the wound, being driven over by the pressure in the right lung. It was packed off with gauze. A portion of the lung was removed using intestinal clamps covered with rubber to hold the lung in position. The bronchi were tied off with black silk. The opening in the lung was carefully sutured with black silk. Wound of the thoracic wall closed off in layers. The dog suffered severe dyspnea when he recovered from the anesthesia. Two days later or on December 18, 1913 the dog died. Autopsy showed the pleural cavity about one-half filled with serous fluid. There were numerous soft adhesions between the operated lung and the parietal pleura. Stitches in lung found in position, none of them having torn through. Intense congestion of operated lung. Death was probably due to pressure upon the heart and lung by the pleuritic fluid.

CASE IV. Operation. Resection of lower lobe of left lung.

Result: Death from empyema one month after operation.

Anesthetic given by Miss Davis. March 12, 1914, 8 p. m. Operation performed under intratracheal insufflation. It was difficult to bring the pressure up to 25 millimeters on account of leakage of ether vapor around the corks of the Wolf bottle. The corks were fastened down more securely with wire and surrounded with paraffin which enabled us to continue the operation. The left side of the chest was opened by a Kocher incision, with resection of one rib. The inflation of the lungs seemed to be fairly good and they retained their normal pink color throughout the operation. A large portion of the lower lobe of the left lung was removed. There was considerable hemorrhage from the cut surface of the lung which was controlled by ligation of the vessels with black silk. The cut surface of the lung was cauterized with the actual cautery upon the suggestion of Dr. de Nancrède. The raw surface of the wound in the lung was covered up by suturing the serous coat and lung tissue over it. A rubber drainage tube was inserted and stitched to the intercostal muscles. A piece of rubber dam was placed over the tube and its edges stitched to the surrounding skin. Dressings of gauze, pads and Scultetus bandage. The dog breathed quietly after recovery from the anesthesia.

March 16, 1914.—Respirations 30; dog apparently doing well but does not move around much. Very little discharge upon the dressings at present.

March 17.—Dressings soaked with fluid and pus. Tube still in position. Fresh dressings applied.

March 24.—Some hemorrhage from wound, tube removed.

April 11.—Dog died, it had been losing flesh and strength for some time. Death was due to empyema.

CASE V. Operation: Resection of lower lobe of the left lung.

Result: Death in three days from postoperative pneumothorax.

March 17, 1914, 8 p. m.—The tube was introduced into the esophagus instead of into the larynx by mistake. The stomach became distended with air at once. The tube was disconnected from the apparatus and compression made over the stomach to expel the air. The tube was then removed from the esophagus and introduced into the larynx and again connected with the insufflation apparatus. An incision was then made over the left side of the chest and a portion of three ribs resected. The lung was well distended, reaching the thoracic wall and had a good pink color. The lower lobe of the left lung was removed. The wounded vessels and bronchi were tied off and the general oozing stopped by the appplication of the actual cautery. Tube drainage was employed and a piece of rubber dam placed over it and its edges sutured to the skin. Sterilized dressings and Scultetus bandage applied. After the removal of the catheter, the dog made considerable noise during respiration with marked dyspnea, respirations, 20.

March 20.—Dog died probably from the distension of the stomach during the time of operation and pneumothorax.

CASE VI. Operation: Removal of the entire left lung.

Result: Death in six days from postoperative pneumothorax.

March 24, 1914, 8 p. m.—Dog operated under intratracheal insufflation, anesthetic given by

Miss Davis. Torek's incision along the seventh intercostal space was used. From the posterior end of the seventh intercostal space the incision was carried upward to the third intercostal space and four ribs were resected subperiosteally near the spine. The phrenic nerves could be easily recognized and when the lung was retracted upward one could see the esophagus under the arch of the aorta and the vagus nerve with its branches. The pulmonary ligament was divided. The pulmonary artery and veins were ligated. The main bronchus was ligated and the end sutured over so as to invaginate the mucous coat. Tube drainage was used and a rubber dam placed over it and its edges sutured to the surrounding skin.

March 26.—Dog jumped out of a box about four feet high and shows some dyspnea.

March 27.—Severe dyspnea, abdominal type of respiration marked, rate, 25. The dressings were all saturated with a bloody purulent fluid. Fresh dressings were applied.

March 29.—Marked dyspnea, respirations 25, dog is very weak and cannot stand up. There has been a free discharge of fluid from the wound.

March 30.—Dog died. Postmortem showed a thick fibrinous, coagulated exudate which filled the whole pleural cavity and blocked the drainage tube. The right lung floats in water. Death was due to pneumothorax and infection from the bronchus.

Case VII. Operation: Resection of portion of left lung, result, death on operating table from paralysis of the glottis.

April 8, 1914, 8 p. m.—It was found impossible to introduce a semi-elastic English catheter into the larynx after the dog was anesthetized. A No. 21 soft catheter was then introduced. Incision in seventh intercostal space and a portion of two ribs resected subperiosteally. A portion of the lung was removed and the wound cauterized. Wound closed without drainage. As soon as the catheter was removed the dog stopped breathing. The tube was again introduced but the dog breathed only at long intervals and finally died apparently from paralysis of the glottis.

Case VIII. Operation. Resection of a portion of the left lung.

Result.: Death in two days from pneumothorax and empyema.

April 21, 1914.—Ether administered by Miss Davis. Under complete anesthesia a number 21 French catheter was introduced into the larynx and trachea without difficulty. Pressure kept at 15 to 22 millimeters but a good deal of the time it was only 8 millimeters on account of the difficulty of maintaining pressure with the bellows. Interruptions in the pressure were made every fifteen seconds for two seconds at a time.

An incision was made in the sixth left intercostal space, axillary line, and extended to the posterior scapular line. The blood was very dark in color, showing that there was insufficient aeration of the blood in lungs because of the low pressure of air in the apparatus. A portion of one rib was resected subperiosteally. The pleural cavity was opened, the edges of the wound retracted and the lower lobe of the left lung grasped with forceps protected with rubber and the greater portion of this lobe removed. The bronchi and important bloodvessels of the lung were ligated with silk. The edges of the wound were sutured with mattress stitches of silk. One stitch was passed through the lung and the chest wall to be tied on the outside so as to hold the lung up against the chest wall. A rubber drainage tube was introduced to a point just inside of the pleural cavity in the most dependent part of the wound. A rubber dam was sutured over it after the wound was closed in the manner which has been previously described. Dressings and bandage applied.

April 22.—Dog stands on his feet but the respirations are very rapid and shallow, rate 80.

April 23.—Dog died at 9 a. m. Postmortem examination showed that the dressings were soaked with pus and fluid. There was a wide spread emphysema upon the left side of the chest and all through the thoracic cavity. There was a very thick purulent fibrinous exudate covering the mediastinum, pericardium and diaphragm. There were numerous adhesions between this exudate and the pleura and lung. The heart contained current-jelly clots. The suture attaching the lung to the chest wall had torn out. Numerous round worms were found in the lumen of the stomach and intestines.

Bacteriologic examination of the exudate shows a staphylococcus infection. Pathologic examination of the lung tissues by Dr. Warthin shows a purulent fibrinous exudate covering the pleura and involving the greater portion of the lung, also hemorrhage into the alveoli and interstitial emphysema. Death in this case was undoubtedly due to pneumothorax, the result of inadequate pressure in the lungs during the time of operation. The catheter was evidently too small for the size of the animal.

Case IX. Operation: Resection of one lobe of left lung.

Result: Death in two days.

May 19, 1914, 8 p. m.—Miss Davis gave anesthetic. The same aseptic precautions as in any hospital surgical operation. Towel clamps applied. End of intratracheal catheter cut off so that it had a terminal instead of a lateral opening. Incision in seventh intercostal space. The distension of the lung was good, ribs retracted with mouth gag, lung grasped with rubber protected clamps and one lobe removed. The bronchi were ligated, cautery applied to wound and the lung carefully sutured. A drainage tube was introduced about two inches from the spine and only to edge of pleura. The air around the operated lung was aspirated with a small air pump and a rubber dam was applied over the tube and sutured into position. Aseptic dressings applied.

May 20.—Dog jumped out of box, dyspnea present.

May 21.—Dog died. Edema of all the tissues and fluid found in both pleural cavities. Tube was blocked with fibrin.

"Postmortem examination shows acute emphysema, rupture of the alveolar walls, congestion and edema. The large tear appears to be postmortem," Warthin. I had inserted the catheter into the trachea and insufflated with the bellows to see how much pressure the lungs would stand without rupturing. No rupture was noticed on the surface of the lung. A moderate distension, therefore, is all the lungs will stand during insufflation without the lungs being so badly damaged internally that the patient cannot recover.

Case X. Operation: Resection of one lobe of left lung.

Result: Death on the table from too low a pressure.

May 27, 1914, 8 p. m.—Miss Davis gave anesthetic. Number 18 French catheter introduced into the trachea. The fourth, fifth, sixth and seventh ribs were resected subperiosteally. The lungs were very dark in color from cyanosis. There was great difficulty in breathing. The distension of the lungs was not sufficient to maintain an adequate aeration of blood to sustain life. Portion of lung removed, bronchi and pulmonary vessels ligated. Lung sutured with interrupted mattress stitches. As soon as the catheter was removed the dog stopped breathing and died. Postmortem showed a marked congestion of the lungs, the color being very dark. The mediastinum had a small rupture. According to Dr. Warthin, the microscopic examination of the lungs showed "Intense congestion and hemorrhage with rupture of bronchioles and alveoli in many places. Alveolar structure completely lost in solid mass of blood in some areas." Death was undoubtedly due to incomplete insufflation of the lungs with consequent complete pneumothorax.

In the following experiments the pressure was maintained by means of compressed air which was installed into the laboratory. This gives a more constant pressure than the bellows and hence is more satisfactory for intratracheal insufflation anesthesia.

Case XI. Operation: Resection of one lobe of left lung.

Result: Death in one week from over insufflation and empyema.

October 16, 1914, 8:30 p. m.—White bull dog weighs 32½ pounds or 14⅝ kilos. Intratracheal insufflation with compressed air and ether. All possible aseptic precautions used in operation. Safety valve set at 30 millimeters. Resection of one rib subperiosteally. Drains of Japanese silk containing cotton used to protect the lung from the edges of the resected rib. Portion of the lower lobe of left lung excised. Bronchi and vessels ligated and cut surface of lung treated with the actual cantery. Careful closure of wound of lung with mattress stitches of silk. Tiegel drain placed in wound so as to prevent postoperative pneumothorax. Air pressure maintained for twenty minutes after the wound was closed. Dressings and bandage.

October 18.—Dog stands up and drinks water, no dyspnea.

October 19.—Dressings changed, some pus discharged with bloody fluid. Respirations 34.

October 20.—Dressings soaked with pus.

October 21.—Tube removed, respirations jerky 40. Dog seems quite sick, but drinks water and stands up in his cage.

October 22.—Large amount of pus discharged from wound. Jerky respiration, dog has lost considerable flesh, rapid thready pulse.

October 23.—Dog died. Postmortem; right pleural cavity shows hemorrhagic exudate and infiltration of lung. Latter floats in water. Left lung shows purulent infiltration, stitches have cut through. It sinks in water. Adhesions between lung and chest wall and between the lung and diaphragm. The pathologic report from Dr. Warthin is as follows: "Kidney, slight cloudy swelling, marked congestion; liver cloudy swelling, congestion. Stomach, congestion. Operated lung, multiple abscesses, generalized purulent pneumonia, atelectasis, organizing fibrinous pleuritis. Other lung, intense passive congestion, large hemorrhagic areas with tearing of walls, edema. Both hemorrhage

per rhexin and per diapedesis." It looks as though the catheter used in this case was too large and the pressure consequently obtained in the lungs was so great as to damage the alveolar structure of the lungs to such an extent that recovery was impossible.

In the following experiments the thoracic cavity was closed without drainage to lessen the danger of infection in the pleural cavity from the outside. A strip of the fascia lata was taken from the thigh under aseptic precautions and sutured over the wound in the lung in each case.

Case XII. Operation: Resection of lung without drainage.

Result: Death in two days from probably too much pressure in the insufflation apparatus.

November 4, 1914, 8 p. m.—Black dog weighing 15 kilograms or 53 pounds. Operation under intratracheal insufflation. Respirations were quite shallow. One rib resected subperiosteally and lung resected. Bronchioles and vessels ligated, lung wound sutured with linen thread. A strip of fascia lata was sutured over the wound in the lung. Dog stopped breathing while the wound was being closed and it was found that the pressure was too high at 30 millimeters and so it was reduced to 15 to 20 millimeters. The wound was closed without drainage. Respirations were 40 and pulse 132 when the catheter was removed.

November 6.—Respirations 40. Dog stands up and drinks water. Examination of urine shows no albumin or sugar.

November 7.—Dog died. Fluid in left pleural cavity, none in right. The right lung has not as many hemorrhagic areas as the one in the last experiment. Pathologic report from Dr. Warthin. "Right lung; very early stage of bronchial pneumonia, areas of gangrene, edema, area of hemorrhage, acute emphysema. Liver, congestion. Spleen, marked hemosiderosis, marked blood destruction somewhere in body. Acute passive congestion. Operated lung; early stage of purulent pleuritis. Bronchial pneumonia. Acute edema. Intense congestion. Hemorrhage. Kidney; acute passive congestion, slight cloudy swelling."

The hemorrhages and emphysema in the lungs were undoubtedly due to an excessive pressure in the insufflation apparatus. The bronchial pneumonia and marked blood destruction in the body may have been due to infection from the distemper germ which was carried into the lungs by the insufflation.

Case XIII. Operation: Resection of lung,

Result: Death in three days from infection with the distemper germ.

Operation November 11, 1914, 8 p. m. by Drs. Hayes and Cattermole. Dog weighs 40 pounds or 18.2 kilos. Intratracheal insufflation anesthesia. Pressure kept at 25 millimeters. Wound closed without drainage. Respirations 35 when the operation was completed.

November 13, 8 a. m.—Respirations 22, but grunty, pulse irregular, about 100. Bowels moved, urine normal. Dog looks very sick.

November 14.—Dog died; very little fluid found in either pleural cavity. Suture line in lung intact and covered with a layer of coagulated exudate.

Pathologic report from Dr. Warthin. "Operated lung. Fibrinopurulent pleuritis. Purulent pneumonia, multiple abscesses. Intense congestion."

Case XIV. Operation: Resection of one lobe of left lung.

Result: Recovery.



Case XIV. Taken six months after operation.

December 29, 1914, 8 p. m.—Dog weighs 19.8 kilograms or 44 pounds. A number 24 French soft rubber catheter was used for intubating the larynx and trachea, and the pressure kept at 25 to 30 millimeters.

Operation performed by Drs. Hayes and Cattermole under strict aseptic precautions. A strip of the fascia lata was used to cover up the wound in the lung.

December 30.—Dog stands up in cage, respirations 40, pulse rapid. Bowels have moved.

December 31.—Respirations 40, pulse 120-130; temperature 102.8 per rectum. Normal resonance on percussion over the entire lung.

January 1. 1915.—Respirations 40, pulse 130, temperature 102. Tympanitie resonance over entire left chest with crackling of subcutaneous



Case XIV. Excision of upper lobe of left lung. (A) Stump of excised lobe. (B) Left lower lobe. (C) Right lower lobe.

tissues upon palpation. Normal resonance over right lung.

January 2: Respirations 40, pulse 132 and temperature 101.5°. The dog gradually improved, and recovered from the operation, became very active, and barked very loudly so that he could be heard all over the medical building.

June 12.—Six months after operation the dog weighs 30 pounds or 13-7/10 kilos. This loss of weight may have been due to the confinement in the laboratory without exercise out of doors. The food was not as nourishing in character during the last month as it was during the rest of the year. Dog was killed with ether. There were numerous adhesions between the operated lung and the chest wall, also marked anthracosis of both lungs. The fascia lata was united with the pleura covering the lung. No fluid in either pleural cavity. The pathologic report from Dr. Weller upon the lungs is as follows:

"Unoperated lung, marked anthracosis, some emphysema, otherwise practically negative. Site of operation: a subacute purulent inflammation. Small abscess. Healing progressing rapidly about the abscess."

CASE XV. Operation: Resection of one lobe of left lung.

Result: Death in six days from empyema.

Operation February 10, 1915.—Dog weighs 23 pounds or 9⅘ kilos. Intratracheal insufflation and operation done under strict aseptic precautions. Resection of one rib. One lobe of left lung held by means of a pair of Kocher's gastro-enterostomy clamps covered with rubber tubing and the lung resected. Wound closed and covered with a strip of fascia lata. At one time the dog was threatened with asphyxia. Wound of skin sutured and covered with gauze and collodion. February 11, dog stands up in cage but appears quite sick, temperature 102.8°, respirations 50, pulse 160. There was slight emphysema over the left thoracic region.

February 12.—Examination of urine shows a small amount of albumin but no sugar, respirations 44, temperature 102.8°, pulse 140. February 13, respirations 70-80. I removed the gauze dressings and found the wound infected. After aspirating in several places considerable fluid escaped from the pleural cavity. Dog looks moribund.

February 16.—Dog died. Considerable fluid found in right pleural cavity and right lung looks mottled and dark in color, but floats in water. Left lung collapsed and covered with a fibrinopurulent exudate. Sutures and fascia in position. Lung sinks in water. Pathologic report from Dr. Warthin: "Marked hemorrhage, abscess. Marked purulent pleuritis. Collapsed lung shows very thick, organizing pleuritis."

CASE XVI. Experiment; application of intratracheal insufflation without any thoracic operation.

Result: No ill effects.

February 24, 1915.—Black male dog weighs 19 pounds or 8½ kilos. Intratracheal insuffla-

tion at 20 to 28 millimeters pressure for twenty minutes. After the tube was removed, the dog breathed rather rapidly for a few minutes but later resumed normal respiration, and made a complete recovery without any ill effects. This experiment shows that the intratracheal insufflation in the absence of pneumothorax is not dangerous in itself if the proper pressure is used.

Case XVIII. Operation: Resection of one lobe of left lung.

Result: Recovery.

April 19, 1915.—Small female dog weighs 22½ pounds. Number 21 French catheter passed into the larynx and trachea after the dog was anesthetized. Aseptic operation performed by Drs. Hayes and Cattermole. Resee-



Case XVIII. Taken two months after operation.

tion of one rib subperiosteally. One lobe of the lung was removed and wound carefully sutured after ligating the bronchioles and vessels. The lung wound was covered with a portion of the fascia lata. External wound closed and sealed with gauze and collodion.

April 20.—Dog doing well and shows no bad symptoms.

June 12, 1915.—Weight is 16½ pounds, or 7-3/10 kilos. emaciated in appearance, probably from confinement and inferior character of the food during the last month. Wound healed with very little scar tissue. Killed with ether and lungs removed.

Pathologic report Dr. Weller: "Unoperated lung; congestion, anthracosis, some alveoli appear over distended. Operated lung: Sub-acute purulent inflammation. Embedded sutures. Organizing fibrinopurulent pleuritis."

Case XVII. Operation: Resection of one lobe of left lung.

Result: Recovery.

April 9, 1915.—Black and white male mon-



Case XVII. Excision of middle lobe of left lung, viewed from behind. (A) Stump of excised lobe. (B) Left lower lobe. (C) Right lower lobe.

grel weighs 50 pounds. Number 24 French catheter passed into larynx and trachea after the dog was anesthetized. One rib reseeted



Case XVII. Taken two months after operation.

subperiosteally. Pressure 25 to 30 millimeters. Resection of middle lobe of left lung, under the same aseptic precautions as are used in any major operation in a modern hospital. Several

bronchioles ligated with silk and lung wound sutured with mattress stitches of silk and a strip of fascia lata sutured over it. There was no leakage of air after the lung suturing was complete. External wound sutured in layers and sealed with gauze and collodion.

April 10.—Respirations 30, dog doing well.

June 12.—Two months after operation. dog weighs 32½ pounds or 14-7/10 kilos; looks emaciated probably because of poor food and confinement. Killed with ether. Some small adhesions between the operated lung and the chest wall and between neighboring lobes of the lung. Fascia lata united over the lung.

Pathologic report from Dr. Weller: "Unoperated lung: Practically normal. Some emphysematous areas. Seat of operation: Areas of atelectasis. Sutures still remain. No positive traces of fascia lata. Inflammatory process practically healed."

Case XIX. Operation: Resection of one lobe of lung.

Result: Death in four days probably from the effects of over pressure combined with infection from the distemper germ.

May 3, 1915.—Small brown female dog weighs 19½ pounds. Number 18 French catheter inserted into the larynx and trachea after the dog was anesthetized by the open method. One rib resected subperiosteally under aseptic precautions. Portion of left lung removed. Stump of lung carefully sutured and covered with a strip of the fascia lata. Dog stopped breathing occasionally but resumed it when the air pressure was reduced from 25 to 20 millimeters of mercury. The external wound was sutured in layers and sealed with gauze and collodion. There was some dyspnea when the tube was removed but the dog soon breathed regularly but about 50 to the minute.

May 6.—Respirations 48 to 50. There is a discharge of frothy mucus from the mouth. She stands up and drinks water.

May 7.—Dog died. Both pleural cavities are half full of fluid. In the left one is a very thick fibrinous exudate covering the entire lung with adhesions to the parietal pleura. The fascia lata was partly destroyed. There was no pus in the pleural cavity. The sutures in the lung were in position.

Pathologic report from Dr. Weller: "Ligature in lung surrounded by area of hemorrhage and necrosis, gangrenous around one ligature. Lung shows atelectasis, hemorrhage and general pneumonia. Fibrinopurulent pleuritis. Other lung shows hemorrhagic area, some areas atelectatic, others emphysematous."

SUMMARY OF THE ABOVE NINETEEN CASES.

Case I. Pneumectomy. Recovery.

Case II. Pneumectomy. Death, 5th day. Empyema.

Case III. Pneumectomy. Death, 2nd day. Pneumothorax.

Case IV. Pneumectomy. Death, 30th day. Empyema.

Case V. Pneumectomy. Death, 3rd day. Pneumothorax.

Case VI. Pneumectomy. Death. 6th day. Pneumothorax.

Case VII. Pneumectomy. Death, on table. Paralysis of Glottis.

Case VIII. Pneumectomy. Death, 2nd day. Pneumothorax.

Case IX. Pneumectomy. Death, 2nd day. Over-pressure.

Case X. Pneumectomy. Death, on table. Pneumothorax.

Case XI. Pneumectomy. Death, 7th day. Over-pressure empyema.

Case XII. Pneumectomy. Death. 2nd day. Over-pressure and distemper.

Case XIII. Pneumectomy. Death 3rd day. Distemper.

Case XIV. Pneumectomy. Recovery.

Case XV. Pneumectomy. Death, 6th day. Empyema and distemper.

Case XVI. Application of insufflation. Recovery.

Case XVII. Pneumectomy. Recovery.

Case XVIII. Pneumectomy. Recovery.

Case XIX. Pneumectomy. Death, 4th day. Over-pressure and distemper.

There were eighteen lung operations and four recoveries.

CONCLUSIONS.

Many of these experiments were failures because it was necessary to develop the technic by careful experimentation before successful surgery upon the lung could be done. An examination of these results will enable one to form an adequate idea of the difficulties that must be overcome in performing operations upon the lungs. As the majority of the dogs operated upon were afflicted with canine distemper the mortality is necessarily much higher than it would have been if healthy animals could have been obtained for this work. A careful study of these results warrants the following conclusions:

Intratracheal insufflation was not without harmful effects upon the lungs even in those dogs who recovered. Interstitial emphysema and over distension of some of the

alveoli of the lung were shown microscopically. These changes were much more marked in those animals that died than in those that recovered and consisted of large hemorrhagic areas with tearing of the walls of the alveoli. Insufflation also has a very harmful effect upon the circulation in the lungs as is shown by the intense congestion and atelectasis found microscopically. In applying this method of anesthesia to intrathoracic operations upon the human being great care must be exercised in order to have the pressure high enough to prevent pneumothorax and still not so high as to cause serious damage to the circulation in the lungs or to cause a severe degree of interstitial emphysema.

The transplantation of a strip of fascia lata upon a wound of the lung gives an added protection to it from infection. Preliminary ligation of the bronchi and careful suture of the lung tissue must always be done. After the suturing is complete careful search must be made for the escape of air from the lung wound by moistening it with salt solution. If any air escapes the wound must be re-enforced by additional suturing. For intratracheal insufflation a catheter of number 18 to 24 French should be used and the pressure should be maintained at 20 to 25 millimeters of mercury.

I desire to thank all those who assisted me in these experiments and especially Dr. Warthin for the examination of the pathologic material and the preparation of the photomicrographs which form a part of this article.

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DISCUSSION.

Dr. Cyrenus G. Darling: I am sure that we are very grateful to Dr. Georg for presenting this experimental work, since he has demonstrated the dangers incident to this class of surgery. Fortunately we are not called upon very often to operate upon the lung. The lung is an organ of wonderful reparative powers and is able to care for the results of trauma or infection without the necessity of direct surgical interference. The cases suitable for operative work in the human being would probably do about as well if treated conservatively as if more radical procedures were employed.

Dr. R. Bishop Canfield: I have been interested chiefly in noting the effect of insufflation anesthesia upon the lung. This method was adopted quite extensively in Germany a few years ago when other methods of anesthesia might equally well have been empoyed. It is very interesting to note that these patients according to these experiments were exposed to considerable danger due directly to the method of anesthesia. I have seen patients prepared for mastoid operations anesthetized by insufflation anesthesia, with perfect recovery, and it is enlightening to see the amount of destruction that may come on in the lung from pumping into it, even though the patients recover.

Dr. Georg: This method of anesthesia is not being used as much at present at it was at the start because of the dangers found to be connected with it. There are very few cases that actually require it in the human being, and as Dr. Darling mentioned, there are very few cases requiring lung surgery.

REPORT OF A CASE OF LARYNGEAL CRISIS IN TABES DORSALIS.

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Mrs. H. age 43, entered the Neurologic Clinic of the University Hospital September 18, 1915 complaining of inability to walk, numbness from the waist down and severe pains all over her body. I wish to report a laryngeal phenomenon which occurred in this patient during her stay in the Hospital and acknowledge my indebtedness to Dr. Camp for the privilege of placing on record this interesting case.

The family history is not important. The patient had the usual diseases of childhood and says that she had syphilis about fourteen or fifteen years ago. She gives a history of a rash. She has been married twice, her first husband dying of dropsy at the age of twenty-one. Her second husband is living and fairly well. She has had three children all by her first husband, and three miscarriages by her first and one by her second husband.

The present trouble began eight years ago with sharp shooting pains all through her body, numbness and weak feeling in her bowels, and numbness and weakness over her lower extremities. She said she would often drop down suddenly, her knees apparently giving way. She has had incontinence of urine and feces. The neurologic examination by Dr. Camp in brief is as follows:

"The patient is somewhat emaciated. She has some enlarged glands in the neck. The pupils do not react to light but do react in accommodation. The extraocular movements are normal, no nystagmus. The tongue protrudes straight, no tremor, no atrophy. Test words are pronounced well. There is no atrophy nor deformity of the arms or hands. The biceps jerks are not obtained on either side. The knee jerks are absent. The Achilles jerks are absent. She walks with two canes saying one would not suffice. Her gait is ataxic."

On lumbar puncture a clear and colorless fluid was obtained with 55 cells per cubic millimeter. A carbolic test was double plus. Nonne-Apelt: phase 1 and 2 positive. The Wassermann test on the blood and spinal fluid was reported strongly positive. A diagnosis of tabes dorsalis was made and the patient placed on treatment.

Previous to her entrance into the Hospital, the patient cannot recall having had any trouble with her larynx. No note of laryngeal involvement is made in her neurologic examination. On November 20 while eating supper the patient suddenly developed a severe spasmodic attack of coughing accompanied by marked inspiratory dyspnea. She became cynotic and respiration ceased for a time. Emergency treatment was instituted. The patient's tongue was drawn from the mouth and artificial respiration resorted to. I was called and reached the patient about ten minutes after the attack started. The patient had resumed breathing but was still having marked difficulty in inspiration. She was in a marked state of excitement due to the impending danger of suffocation. Her face was congested and dusky and the eyes were very prominent. Occasional momentary fits of coughing accompanied this stridor. After I arrived the patient exhibited one pronounced attack of coughing lasting for about two minutes. She attempted to tell us something was irritating her throat, threw herself on the bed, her costal and abdominal muscles of respiration and the muscles of her upper

and lower extremities being thrown into spasmodic contraction. At no time did the patient lose consciousness. The series of attacks lasted about twenty minutes after which the patient became quiet and resumed her meal. On the following day she felt well, her only complaint being that of slight soreness in the region of the larynx, due no doubt to the irritation from coughing.

The patient describes the attack as follows: On taking the first bite of a sour pickle, she suddenly began to cough; thinking that she had aspirated a portion of the pickle, she conveyed this impression to the nurse whose attention was attracted by the coughing. For this reason the case was considered one of a foreign body in the respiratory tract. The patient did not succeeed in coughing up the foreign body nor does she recall swallowing it. Examination of the throat and larynx by palpation and indirect method was negative. No signs of foreign body in the respiratory tract could be elicited on physical examination of the chest at that time or on the following day. Examination of the larynx later was negative with the exception of a slight redness and thickening of the mucosa over the arytenoid processes and slight thickening of the vocal cords. There was no paralysis either on forced inspiration or phonation. In talking with the patient later she stated that the attack of coughing began the moment she inhaled the vinegar fumes from the pickle. Following the examination of the throat and chest and knowing the previous neurologic history of the patient, a diagnosis of laryngeal crisis in a case of tabes dorsalis was made.

In making a differential diagnosis, an attack of coughing due to the aspiration of a foreign body and a hysterical attack must be considered. In this case no foreign body could be found and the attack was too long and too severe to be attributed to this cause. No stygmata of hysteria are mentioned in the neurologic examination. Such an attack in a child would also suggest croup or laryngeal vertigo.

The occurrence of tabetic crisis has long been known. Gastric crises characterized by intense paroxysms of pain and vomiting are the most common. Laryngeal crises are next in frequency according to Osler. Cases exhibiting cardiac, bronchial, nasal, ocular, nephritic, uterine, clitoral and rectal crises have been reported. Authorities are quite well agreed that laryngeal crises are probably due to acute spasm of the adductors of the larynx. According to Grünwald the cords are fixed in adduction and the spasm is accompanied by coughing, marked dyspnea and loud inspiration. Oppenhein states that the requisites for a tabetic crisis are: First, a sensory irritation; second, a motor spasm and third, a hyperthesia of the parts affected. Very few authentic cases have been placed on record. The first case reported was that by Ferrol in 1868. In 1907 W. B. G. Harland of Philadelphia read a paper before the section of Otolaryngology at the annual meeting of the American Medical Association entitled "The Larynx in Locomotor Ataxia." In preparing this paper Dr. Harland examined many hospital patient and says, "I have been unable to find a case of laryngeal crisis and neurologists of my acquaintance tell me that this condition is extremely rare. Laryngeal paralysis is the most common manifestation of tabes in the larynx and is usually central. There is no apparent relation between laryngeal paralyses and laryngeal crises. They may occur in combination or independently. Davis reports a case of laryngeal crisis with abductor paralysis.

Touche in examining forty cases of tabes reports twelve with laryngeal crises. Green reports seven cases in examining sixty cases. Three of these were without evident paralysis of either cord.

The majority of cases have occurred in females. In many of the cases there is a history of a sensation in the throat as of a foreign body. The inhalation of irritative gases is given as an exciting factor. The duration and intensity of the attacks vary. Moore and Martin report fatal cases of laryngeal and bronchial spasms in which tracheotomy was performed, death resulting ten days later. Cases are reported in which the patient became unconscious.

In the present case, no treatment was instituted and the patient made an uneventful recovery. The use of cocain as a local application in the larynx, the use of morphine hypodermatically, bromides by mouth, and the use of ether and choloroform have been recommended in treating laryngeal crises.

This case is placed on record as a rare manifestation of tabes. Laryngeal tabetic crises as a rule occur as a late manifestation of the disease and for this reason their diagnostic value is not great. Coakly, however, suggests that in cases of laryngeal spasm, in adults, in the

absence of a history of a foreign body, a careful examination for other signs of tabes should be made.

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G. A. Allen: A case of tabes dorsalis in a female in which laryngeal crises, ocular paralysis and vasomotor phenomenon were early symptoms. *The Glasgow Medical Journal*, Vol. 72, No. 3, page 191.

DISCUSSION.

Dr. R. Bishop Canfield: The question of laryngeal crisis is interesting chiefly because these crises appear rarely and when they do their etiologic factors are frequently confounded, a perfectly innocent cause being ascribed to a very dangerous complication, or vice versa. They occur chiefly in laryngoplegic migraine, a rare occurrence in which there is a migraine, a laryngeal paralysis and a crisis. These occur in varying degrees of severity, in some the headache being the most prominent factor, while in others the crisis is the most prominent factor. In these cases there is sometimes a very definite paralysis usually an abductor paralysis, that is, one with the cord in the position of phonation. They occur also in laryngeal vertigo, in status lymphaticus, in tabes and finally in foreign body cases. Laryngeal crises in children are very frequently fatal. I have seen three or four children in whom the diagnosis of foreign body had been made because of the fact that the crisis came on while eating. A child previously healthy, 8 or 10 years old, at dinner suddenly has a paroxysm of coughing, no cyanosis, weak and rapid pulse, and death in the course of a few hours or days. Several such cases have been brought to the Hospital with the diagnosis of a foreign body.

The crisis of hysteria differs chiefly from these in that there is usually no cyanosis. The patient breathes just enough to maintain a normal color. The question of the condition of the larynx during these crises has never been made out because no one has been able to see the larynx during the crisis. This case is also interesting because so far as I know it is the first one which has been observed in this Hospital.

THE STARVATION TREATMENT OF DIABETES.

Mark Marshall, M.D.
Instructor in Therapeutics and Materia Medica, University of Michigan.

On account of the lateness of the hour I will try and be brief. Before considering the starvation treatment of diabetes I would like to review briefly the older methods of treatment. They provided in the milder cases for the restriction of the carbohydrates to a point where sugar does not appear in the urine. In the more severe cases the proteins are also reduced in order to keep the patient sugar free. Every effort is made to make the patient gain weight, the latter being regarded as an index to the progress that the patient may be making.

We are indebted to Dr. Allen of the Rockefeller Hospital for what seems to be a radical improvement in our methods of handling diabetes. Dr. Allen experimented upon dogs. He removed portions of the pancreas, taking care in each instance to preserve the pancreatic duct in order to avoid atrophy of the gland. He was thus able to produce cases of glycosuria of varying severity depending upon the amount of pancreatic tissue removed. These animals furnished interesting subjects for dietetic experiments. He found, as had been previously observed, that they were benefited by short periods of starvation. In the past we have been in the habit of starving patients for a short time, but generally the starvation consisted in the so-called green diet which would give the patient about 800 calories a day. Allen found that even the severe cases if starved completely would become sugar free, and to his surprise, there was no tendency to acidosis. He found later that by keeping the diet at a low point after the starvation that they did not show the tendency to develop the glucosuria that they did when the diet was a full one. He not only reduced the carbohydrate but also reduced the proteins and fat in the diet. The animals were maintained at a low level of metabolism, and were kept permanently under weight. These principles were then applied to human beings. Dr. Allen asked that the most severe cases of diabetes be sent to him for treatment. It required from one to ten days to get his various patients sugar free. After they were sugar free he continued the starvation for one or two days. Then small amounts of food were started beginning with

fats and proteins. Later carbohydrates were added. The patient's tolerance for carbohydrates and proteins was determined. In all instances the metabolism was reduced and the patients kept under weight. With the older methods we always attempted to maintain a normal weight.

A recent addition has been made by Dr. Allen to his method of treatment, namely, the introduction of systematic exercise. His experimental work on animals showed that if the animals were exercised, forced to work in a tread mill, that the tolerance for carbohydrates would increase. He further showed that the sugar in the blood was reduced and even in some of the severe cases it never returned to the high point at which it stood previous to the introduction of exercise. This point has been introduced in the treatment of human beings. It does not increase the patient's weight but does increase the muscular strength. The diabetic patient is changed from a neurasthenic to an athletic type.

Dr. Allen points out certain incidental, but nevertheless important. advantages of the starvation treatment. First, it shortens the patient's stay in the hospital. Second. it gives him immediate encouragement because he becomes so quickly sugar free as a result of which he is more willing to submit to dietetic restrictions.

We have tried the treatment with pretty good results in the University Hospital. Any failures which we may have had were due, I am sure, to our not following strictly the régime advocated by Dr. Allen, who advises that in any instance where the glycosuria returns, that the patient be immediately starved until the sugar disappears. The latter is a point which we have not observed as carefully as we should. Our results for the most part are excellent. Our cases have become sugar free in a short time, in most cases about three days, in one case seven days. This method is still in the experimental stage but it bids fare to upset many of our previous ideas concerning the treatment of diabetes.

PROPAGANDA FOR REFORM.

Protonuclein and Protonuclean Beta.—Eight years ago, the Council on Pharmacy and Chemistry published a painstaking and exhaustive report on Protonuclein and other products of Reed and Carnrick. This report showed conclusively that the whole theory of nuclein therapy was a tissue of speculation, into whose textures are woven only a few slender threads of fact. Now the Council reaffirms its former action with regard to Protonuclein. The objections to Protonuclein apply with equal force to Protonuclein Beta, said to be Protonuclein mixed with equal amounts of nucleoplasm and protoplasm of the spleen. In view of the lack of evidence the claims made for Protonuclein Beta are unwarranted. The Council, therefore, reports that it is ineligible for New and Nonofficial Remedies (*Jour. A.M.A.*, Jan. 1, 1916, p. 38 and 48).

The Composition of Liquid Petrolatum.—As naphthene hydrocarbons predominate in Russian crude petroleums and paraffin hydrocarbons in many or most American crude petroleums, it was assumed that the petrolatums derived from these sources differed from each other in like manner. While both the naphthenes and paraffins are chemically inert, some unexplained therapeutic superiority has been asserted to reside in Russian liquid petrolatum. Benjamin T. Brooks, of the Mellon Institute, explains that most so-called "mineral oils" used for therapeutic purposes contain no paraffin hydrocarbons whatever and that, regardless of the source of the crude petroleum, the fraction which constitutes the liquid petrolatum is composed essentially of naphthenes and polynaphthenes (*Jour. A.M.A.*, Jan. 1, 1916, p. 38).

Anesthesin.—Anesthesin is paramino-ethyl-benzoate. New and Nonofficial Remedies states that it is one of the products which owe their existence to the discovery that the local anesthetic action of cocaine is due to the radical of benzoic acid in combination with a nitrogen-containing basic group. Treasury Decision 2184 contemplates the registration of anesthesin under the Harrison narcotic law (*Jour. A.M.A.*, Nov. 20, 1915, p. 1837).

Hydropsin.—According to the Ernst Bischoff Co., Inc., Hydropsin is the juice of digitalis, squill, European birch, juniper and knot weed, dialyzed and physiologically standardized. The Council on Pharmacy and Chemistry reports that the composition claimed for Hydropsin brands it as an irrational mixture in which potent drugs are combined with, and more or less covered up by others that are obsolete and inefficient. The name, instead of indicating its composition, suggests diseases in which it may be thoughtlessly and indiscriminately used. The claim that the danger of toxic or cumulative action has been removed, if accepted by physicians, tends to uncritical use with possible disastrous results (*Jour. A.M.A.*, Jan. 8, 1916, p. 135).

The Journal
OF THE
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March

Editorials

DUES.

The annual dues of members are payable on or before April 1st. Those members whose dues are not reeeived by the County Secretaries in time to be remitted by that offieial to the State Seeretary before April 1st, will have their names automatically removed from the mailing list and be placed on the suspended list. If you fail to receive the May *Journal* you will know that you have failed to pay your annual dues and that you have deprived yourself of the proteetion offered by our Medical Defense.

OFFICIAL CALL FOR PAPERS

The Fifty-first Annual Meeting of the Michigan State Medical Soeiety will be held in Houghton, August 15, 16 and 17. Members desiring to read papers before any of the several Scientific Sections are hereby requested to notify the Section Secretaries of their intention.

As the Section Secretaries are already planning their programs it is essential that they be promptly informed as to what papers are available.

MEDICAL PREPAREDNESS.

As in other activities pertaining to the common weal, physieians are largely interested in the subject of preparedness and devoting time to the dissemination of knowledge upon the subjeet. Physicians constantly deal with facts, with actual conditions, with the results of neglect, with evils that proceed from lack of vision. In public affairs they are not given to speeulation and in their professional work theorize as little as possible. By and large, they are more judicial than jurists, admit evidence from every source and seek light upon obscure conditions from every angle. By reason of such training and experience, they are more apt to see things as nearly as possible in their totality, and are not readily misled by platitudes as to what conditions should be in the light of what they aetually are. They realize that until through generation after generation of good will and consideration for one's neighbor without respect to boundary lines, there is developed a settled habit of thinking that war is futile, it will be in existenee. You will scarcely find among them those who indulge in the silly outgiving "We don't want war, therefore we will not prepare for it," or those who seem to believe that through individual or co-operative wishing a thing away, it will at once disappear. In other words, the minds of most physicians are illuminated by the rays of common sense and they know that in democracies as elsewhere, a measure indispensable to secure the lives and liberties of the people, is to adequately prepare to resist aggression.

Upon physicians rest the most difficult duties pertaining to war. Fatigued by prolonged vigils, by nerve-wracking work and by unremitting demands in the eare of the wounded; in positions of great peril, torn to pieces by the emotions that close aequaintance with suffering arouses, they have conducted themselves in the ghastly and unpardonable conditions in Europe in a way to glorify themselves and their profession.

It is little realized by the public or by the profession itself that the strength of armies to-day lies in medieal management. Capt. Fortesque who has been an observer with the armies in Europe, stated at the meeting of the National Security League in Washington that the care of the wounded was a relatively small matter in the province of the physician; that he was expected to keep the armies fit and husky; that questions as to economy, the food value, and portability of rations, the hygiene of camps and everything tending to keep the individual well and efficient was determined by the medical officer. Lets get ready for the worst, hoping for the best, in order that the medical profession of the United States will be able in an

emergency to meet the tremendous responsibilities which will devolve upon it.

In this connection, it may be desirable to emphasize the importance of identification with the work of the Red Cross. Japan with a population of 4,000,000 has 1,800,000 members of the Red Cross and an endowment of $13,000,000; Germany with 67,000,000, a membership of more than 1,000,000 and an endowment of millions; the United States with 100,000,000 population has a membership of 27,000, and an endowment of $900,000. I quote from the report of Miss Boardman's address to the National Security League, contained in the Washington Evening Star. This League (The National Security) must have a large membership to be influential. It would be well to form a branch in every town. The Headquarters of the League is 31 Pine street, New York.

C. B. Burr.

FRESH AIR.

Morse[1] in discussing "fresh air" states: "Some writers apparently mean by this term pure air without regard to its temperature, others seem to mean cold air without regard to its purity, others air which is pure and cold and still others do not attach any definite meaning to it. He defines fresh air as an air that is cool, dry and in motion."

In this present day when so much is being said and written about fresh air as an essential adjuvant in the treatment of most of the human ailments it becomes necessary for the attendant to explain what is meant by the advice of "Obtain as much fresh air as is possible."

Cold air exerts a baneful and irritating influence upon many of the acute and even chronic respiratory conditions. Acute nasopharyngitis, acute laryngitis, and in acute bronchitis, *cold* air exerts an irritating influence of the mucous membrane lining these passages.

On the other hand it has been observed that cold air raises the blood pressure in the pneumonias when there is a vaso-motor paralysis but whether such an effect is beneficial is questionable.

Summed up the conclusion must be reached that fresh air at a temperature of 50 to 60 degrees F. exerts a most beneficial influence. At a lower temperature its effect is prone to be detrimental. The air must be pure, that is, free from bacteria, dust and smoke. It must be used with discretion. Cold air is of advantage in some conditions but harmful in others.

1 Journal A.M.A. Jan. 8, 1916.

The paucity of data upon the subject makes Morse's warning and comments of timely value in that it brings to our attention that additional qualities other than cold are essential to secure beneficial results from fresh air treatment. A compilation of extensive observations and discussion of the subject consequently becomes desirable.

"LAWYER-DOCTOR" HOLD UPS.

With growing frequency the courts are trying cases instituted to recover damages for personal injuries that have been trumped-up and instigated by an unscrupulous attorney who has enlisted the aid of some morally degenerated doctor. This despicable combination—"Lawyer-Doctor"—boldly solicit cases from individuals who have been unfortunate enough to sustain personal injury—frequently of a trivial nature. By holding forth promises of large sums of money they secure the power of attorney and set forth to hold-up the individual, company or corporation that was concerned in the injury. Demands are made for a large sum of money and if refused suit is begun. At the trial the doctor takes the stand, violates his oath, and perjuring himself swears the injured party has sustained serious and permanent injuries. The sympathetic jury, awards a verdict of several thousand dollars. The plaintiff eventually secures half and the other half is split between lawyer and doctor. Thus is fraud, deceit, malignering and extortion abetted.

The time is fast appproaching when legislature, courts, business and public sentiment will cause an exposure of such a combination to defraud and provide adequate punishment.

Inasmuch as this practice is growing and the cases are occurring with increased frequency it behooves the medical profession to express its emphatic disapproval. We are judged as a whole and when our professional, moral and social standard is lowered by a few, the profession as a unit loses the favor and the respect of the public at large. Shyster lawyers exist; shyster doctors should not be permitted to exist. The necessary enactments should be adopted whereby the doctor, who stoops so low, casts reflections on his fellow practitioner by his perjured and fabricated testimony and lowers the standing of the medical profession in the minds of the public, be expelled from membership in our organization. The time has come when the ranks of the medical profession must be purged of such degenerated and morally degraded individuals.

Editorial Comments

"To possess vitality the doctor must be organically united to the general body of his profession. To be detached therefrom is not to live separately; it is to be dead, a mere corpse of a doctor. Give your little and get all in return, is the law of our professional being."

The Detroit meeting of the American Medical Association promises to be one of the largest attended meetings of that organization. Michigan men should turn out in full force. We urge that you write in now for your hotel reservation. To delay will mean disappointment. Do it today.

Are you patronizing our advertisers of medical books publishers? They are offering you the latest works—books that you need.

In accordance with preliminary announcement made in the *A.M.A. Journal* previous to the last A.M.A. convention, the American Medical Golfing Association held its first tournament in San Francisco, June 21, 1915. Arrangements were then made for the organization and that is now complete with the following directors:

President—Wendell C. Phillips, New York.
Vice-President—James Eaves, San Francisco
Secretary-Treasurer—Will Walter, Chicago.

The plans are now being made for the second tournament to be held in Detroit at the forthcoming A.M.A. convention in June.

The Directors have decided to list as charter members all fellows who shall have enrolled by April 1, 1916.

All fellows of the A.M.A. who play the game are eligible and may obtain the detailed information from the Secretary-Treasurer, Dr. Will Walter, 122 S. Michigan Boulevard, Chicago.

Members of the British Medical Association have a similar organization for play at their annual meetings, and it is thought that this will add materially to the social interests of the A.M.A. as it has to the B.M.A. conventions.

The claim of individual officers of Anti-Tuberculosis, Infant Feeding and Prenatal organizations that they alone are responsible for the lowered mortality is presumptuous. While acknowledging that they are carrying on a commendable campaign there exists no reason for them to ignore the efforts of others and in self-satisfaction announce that their effort is the sole reason for decreased mortality rates. To the profession as a whole, to the advancement in culture and status of the public as a whole, to the architects, to public recreation parks and play grounds and to several other present day environments and influences must a large share of credit be given.

In re-reading the annual report of our Medico-Legal Committee we were astounded indeed to learn that certain members of the profession remained so shortsighted as to be willing to appear against a fellow physician in mal-practice suits. Practically every suit alleging mal-practice is an attempt to black mail. If successful it but inspires other suits. The willing witness knows not but what he may be the next defendant. Little behooves it then for him to act the role of an abettor of a pre-meditated persecution.

For the convenience of the Transportation Committee those of our members who intend attending our annual meeting at Houghton are requested to mail the Secretary a postal card stating whether or not they desire boat accommodations. The meeting at Houghton is bound to be of unusual interest from a scientific and recreation viewpoint. To make it doubly so it is necessary to have some estimate of the number that will be in attendance.

For the general practitioner a well-used library is one of the few correctives of the premature senility which is so apt to overtake a physician. Self-centered, self-taught he leads a solitary life, and unless his everyday experience is controlled by careful reading or by the attrition of a medical society it soon ceases to be of the slightest value and becomes a mere accretion of isolated facts, without correlation.

Be a BOOSTER for your society, your profession and your neighbor. In the end they will boost twice as hard for you.

Your 1916 dues must be paid to your local Secretary before April first if you desire to maintain uninterrupted membership in your county, state and national societies. Mail your check today.

The movements directed toward advancing the work of prevention of disease, education of the public in health matters, etc., when borne on the wave of enthusiasm of a few individual unoccupied laymen is as a rule imbued with the purpose of self-advertisement and as such is to be condemned. These movements should be promulgated by the combined efforts of all physicians—not the isolated few—and that of a united community in which every individual shares in the responsibility and work.

Six months have elapsed since the Tuberculosis Survey, made possible by the funds the legislature appropriated, was undertaken. May we not at this time have a preliminary report of what has been done and whether or not any definite conclusion may be announced? The profession is intensely interested in this state-wide work and would welcome authoritative information.

Deaths

Dr. J. B. Book of Detroit died Feb. 1 from complications of grip attack. Dr. Book was director of several banks, authority on medicine and very prominent in society.

Dr. J. S. Edwards of Grand Rapids died Jan. 27 of pneumonia, being ill but four days. He had been a practitioner in this city for twenty-seven years and the city of Grand Rapids as well as the medical profession in this section of the state, feels the loss of a warm friend, able practitioner and self-sacrificing physician.

Dr. H. D. Hull of Bellevue died Jan. 22 after a year's illness. He was one of the oldest physicians and surgeons in that vicinity and was highly esteemed by all who knew him.

Dr. Alfred Ira Noble was born in Fairfield, Maine, March 3, 1856, and died in Detroit, Michigan, on January 20, 1916.

He received the degree A.B. from Colby College, Maine,, in 1883, and M.D. from Bowdoin College in 1886. He was president of his class in each of these colleges.

He married Ella Annie Boole August 27, 1887.

He engaged in the practice of medicine in Boston for one year, then became associated with the Worcester State Hospital, first as Assistant Physician and later as Assistant Medical Superintendent. He held the latter position until 1905, when he received the appointment of Medical Superintendent of the Kalamazoo State Hospital, which position he held until the time of his death.

The Doctor was for a number of years Secretary of the New England Psychological Society. He was a fellow of the Massachusetts Medical Society and of the American Medical Association, and member of the Worcester Medical Association, American Medico-Psychological Association, the Detroit Society of Neurology and Psychiatry, the Michigan State Medical Society and the Kalamazoo Academy of Medicine. He affiliated himself with the Academy shortly after taking up his residence in Kalamazoo, and was actively interested in this organization from the first, contributing valuable papers, entering into discussions, and acting as host of the Academy on several occasions. The clinics which he furnished the Academy were especially instructive and largely attended.

While not a voluminous writer, he contributed from time to time to medical literature and to the general public, well prepared and exceedingly instructive papers on medical and sociological subjects. A paper on "Shorter Hours for Nurses and Attendants," published in the proceedings of the American Medico-Psychological Association, marked the beginning of an important change in hospital management. His paper on "The Curability of Insanity," read before the Detroit Society of Neurology and Psychiatry on February 6, 1913, and published in the Worcester Hospital papers, demonstrates most convincingly that the percentage of recoveries claimed by most psychiatrists and most text-books is altogether too high.

During his administration of affairs at the State Hospital he planned and directed the construction of the Van Deusen Hospital, a receiving hospital for women, equipped with modern apparatus for treatment. He secured the construction of a laboratory and employed a pathologist whose entire time is given to pathological and research work. The Doctor recognized the value of occupation not only as a curative measure but a means of education in chronic custodial cases, developing them into useful members of a hospital community. Through his efforts a large industrial building is in process of construction which, although he did not live to see completed, will stand as a monument to his zeal in this direction. One of his last acts was the placing of the training school for nurses on an advanced basis, extending the course to three years, raising the standard of admission and requiring nine months, training in some general hospital.

Dr. Noble was very conservative, yet always progressive, a man of high ideals, a gentleman, and he possessed a wealth of tact, diplomacy, and genuineness that made lasting friendships with the public, his patients, and those who worked with him.

His remains were taken to Boston, Mass. for interment.

REPORT OF COMMITTEE ON RESOLUTIONS.

Your committee appointed at a special meeting of the Kalamazoo Academy of Medicine, held on January 21, 1916, to draft resolutions relative to the sudden passing of Dr. Alfred I. Noble on the morning of January 20, 1916, at Detroit, Michigan, begs to present the following:

That this Academy feels beyond any power of expression the suddenness of the summons

which brought to a close the life and work of our colleague and friend, Dr. Noble. He was pre-eminently the most prominent and most beloved figure on the roster of our Academy, and death's aim has laid low this Association's most shining mark.

He went in the full flush of manhood and strength, laden with work and duties to be performed.

Dr. Noble was a dignified and scholarly man of a most kindly and generous disposition. He never apparently noticed the faults of his associates, but was quick to extol their virtues. In the Academy of Medicine he was an enthuiast, always ready to contribute to the promotion of the work by either papers, case reports or in discussion, and took a leading part in its transactions. His kindly smile and gentle address were proverbial, not only among his patients, but to the public at large.

> "Many a tear and blessing went
> With him, beneath that low, green tent
> Whose curtain never outward swings."

Therefore, be it

RESOLVED, That recognizing the great loss to the Academy and to its individual members in the death of Dr. Noble, a copy of this tribute be entered upon our records, and the Secretary be instructed to extend to the family this expression of our deepest sympathy.

HERMAN OSTRANDER,
W. A. STONE,
J. W. BOSMAN.

RESOLUTIONS.

Passed by the Academy in Session January 25, 1916.

WHEREAS, A Health Department, standing as it does for the happiness and well-being of the citizens of any community, should be its chief concern and therefore liberally supported; and

WHEREAS, The salary of the Healtb Officer of Kalamazoo has been so reduced and certain inspectors cut out by the present city administration, that the efficiency of the Department has been seriously affected, causing the resignation of Dr. A. H. Rockwell, who for seven years has discharged the duties of executive officer of the Department in a most fearless, capable, and systematic manner, and through whose efforts largely Kalamazoo now stands in the front rank of Michigan cities along health lines, as attested to, not only by the citizens of Kalamazoo, who have watched with interest the development of this branch of city work, but by state officials as well. In a letter to Dr. Rockwell, Dr. John L. Burkbart, Secretary of the State Board of Health, writes as follows: "It is just such incidents as this that discourage all efforts on our part to build up an efficient Puhlic Health Service in this state. Municipalities ordinarily hegrudge every cent that is expended for the protection of the public health, when the reverse should obtain. Personally, I know you have heen a highly efficient and capahle Health Officer. Your reports to this office have been prompt and the records of your office will substantiate the progress which has been made during your administration as Health Officer. I sincerely hope the matter will he reconsidered and your salary placed back to $1,500.00, wbich is unquestionably a very low salary for the city of Kalamazoo. You may rest assured that, as long as the writer occupies his present position, your services will always be required as an Acting Medical Inspector of this Board, and I am sure that the sentiments expressed by the writer are those of every individual member of the Board." Therefore, be it

RESOLVED, That the Kalamazoo Academy of Medicine in session assembled, does protest against the action of the present city administratiou in reducing the salary of tbe Health Officer aud in reducing the force of the inspectors. Such action tends to lower the standard of high efficiency which the Health Department, under the able management of the present Health Officer, has reached. Be it further

RESOLVED, That the Academy of Medicine does protest against any attempt on the part of the city to collect from a number of Health Officers back registration fees which have always been considered as a part of those officers' salaries. And be it still further

RESOLVED, That the Academy of Medicine goes on record as favoring an all-time health officer with salary commensurate with the duties and dignity of the office in a city the size and standing of Kalamazoo.

Ralph C. Apted, M.D., of Grand Rapids, died February 13, 1916 after a long illness. Dr. Apted held the rank of major in the Michigan National Guards.

SOLDIER PASSES.

Grand Rapids Herald, Feb. 15—Major Ralph C. Apted, soldier in the army of true friends, has passed to the great beyond. In the battle of life, many a soldier must fall, but of all that great throng that has been cut off within the last year, not one leaves a greater break in the ranks than Major Apted.

His weapons were a great heart, a wonderful sympathy. His darts were of love and of kindness. These he shot straight to the hearts of all who knew him, for enemies he had none. As a surgeon in the Spanish-American war he worked night and day among the sick and injured. He brought to their cots cheerfulness and hope. As surgeon in the National Guard he was loved by all the men, for his first thought was always of their welfare.

For many years he was city physician, and many a humble soldier faltering on the field of life gained strength to bear his standard forward when he heard Major Apted's cheerful voice command: "March on."

But the Great Commander of the universe bade him come and Major Apted, heeding the command, left the army of life to become a soldier on the eternal plains of peace. He has earned whatever eternal rewards the Great Commander bestows upon those who have kept the faith. And his earthly memorial is a shrine in the hearts of those he served.

Strontium Bromide.—The official bromide contains about two-thirds as much bromide as is contained in potassium bromide and about three-fifths as much as that contained in sodium bromide. Hence it may be expected that the bromide action from strontium bromide will be much less than that of either potassium bromide or sodium bromide (*Jour. A.M.A.*, Jan. 29, 1916, p. 376).

State News Notes

There were 4,463 deaths reported to the Department of State, as having occurred in the State of Michigan during the month of January, 1916.

This number corresponds to an annual death rate of 17.0 per 1,000 estimated population, which we note is the highest death rate for the State for a single month in the past fifteen years. This unusually high death rate is undoubtedly due to the large number of deaths of elderly persons, aged 65 years and over, of which there were 1,782 deaths, or nearly 40 per cent. of the total number returned for all ages. In addition to the above number of deaths there were returned 266 stillbirths as deaths, which, according to plan of all registration offices, are not included in the total number of deaths.

By ages, there were 641 deaths of infants under one year of age; 182 deaths of children aged one to four years, both inclusive; and 1,782 deaths of elderly persons aged 65 years and over.

Important causes of death were as follows: Tuberculosis of lungs, 199; other forms of tuberculosis, 34; typhoid fever, 23; diphtheria and croup, 53; scarlet fever, 19; measles, 14; whooping cough, 24; pneumonia, 532; enteritis, under two years of age, 66; meningitis, 20; influenza, 425; cancer, 222; violence, 194. In addition to the above, there were three deaths returned from poliomyelitis, and one death from tetanus.

As compared with the month immediately preceding, an increase is noted in the number of deaths returned from tuberculosis of organs other than of the lungs; diphtheria and croup; scarlet fever; whooping cough; pneumonia and bronchopneumonia; enteritis, under two years of age; meningitis; influenza; cancer; and violence. A slight decrease is noted in the number of deaths returned from tuberculosis of the lungs, typhoid fever, measles. The greatest increase was from influenza, 311 more deaths being returned for January than were returned for December. As has been stated, the greater majority of these deaths occurred in the age period, 65 years and over.

The distribution of these deaths by counties and by cities is shown in the Monthly Bulletin of Vital Statistics, published by the Department, and a copy of same will be mailed to anyone requesting same.

Upon referring to the tables of counties we find that the greatest mortality occurred in Luce county, in the Upper Peninsula. This county shows a mortality rate of 51.5 per 1,000 estimated population. This county also shows the highest birth rate for the month, 40.4; Baraga county, also in the Upper Peninsula, shows the lowest death rate, 1.7 per 1,000 estimated population. The county rates are, however, fairly uniform, there being only a slight difference from the State rate of 17.0.

The different State institutions (hospital and asylums), reported deaths as follows: Traverse City, 25; Kalamazoo, 29; Soldier's Home, 23; Lapeer, 4; Newberry, 11; Pontiac, 22; Ann Arbor, 17; Wayne County House and Asylum, 41.

There were 6,418 births returned to the Department as having occurred in the month of January. This number corresponds to an annual birth rate of 25.4 per 1,000 estimated population. An increase of 268 births is noted as compared with the month immediately preceding. In addition to the above there were 249 stillbirths returned as births, but not included in the above total. The infant mortality, that is, the ratio of deaths of infants under one year of age per 1,000 living births, was 100.

The following was clipped from one of our state newspapers. Names are purposely omitted. Further comment is hardly required—the wonder is that any physician would abet such an article appearing in a public paper. "The tale is a sad one."

RARE OPERATION.

E. C. of C. who had been suffering with abscess of the liver, and was operated on about three weeks ago by Dr. L. J. B. of M. P., is rapidly recovering from the ailment and operation. One of the peculiar features of this case is that abscess of the liver is rare in this climate, and the other is that Dr. B., without assistance of either nurse or associate physician, performed the operation and saved the man's life when the spark was so nearly snuffed out; but the case demanded immediate action, and the doctor rolled up his sleeves and tackled an operation that would have caused noted hospital surgeons to pause and consider.

The usual operation performed for the cure of abscess of the liver requires the services of a surgeon assistant, a physician to administer an anesthetic, and a trained nurse, and Dr. B. resolved himself into the whole and usual force.

Having been called to see the patient, and diagnosing the case as abscess of the liver, which needed prompt action, the doctor anesthetised the skin and tissues over the abscess with the comparatively new local anesthetic, Novocaine, then cutting a small slit through the skin he forced a large trocar (a hollow metallic tube with a sharp plunger) through the tissues into the abscess, and upon removing the plunger, the contents of the abscess, measuring about a quart of puss, ran out, and after a day the doctor removed the metallic tube and replaced it with a rubber one, through which he washed out the abscess from day to day, and at the present writing he has removed this tube and Mr. C. is on the road to health.

Two other remarkable features of this operation are the fact that Mr. C. did not suffer any pain, and could talk and joke with the doctor during the operation, and the resourcefulness of Dr. B. himself, in devising so simple a procedure in what heretofore has been a very serious situation; and right here the Courier will remark that if there is a city in Michigan, big or little, that has a better half score of physicians and surgeons, than M. P. possesses, it hasn't made itself known up to this time.

That's why the hospitals in the big cities around us don't bank on much patronage from M. P.; when the physicians of M. P. find a baffling case they simply go to work and baffle it, and now with our new hospital, in charge of two of the best trained nurses, outside surgeons will get fewer calls than ever.

The Courier congratulates Dr. B., and also congratulates Mr. C.

Dr. Herman Ostrander, for more than twenty-five years connected with the Kalamazoo State Hospital as physician, secretary and assistant superintendent, has been elected by the trustees to succeed as superintendent the late Dr. Alfred I. Noble, who died suddenly a short time ago in Detroit.

Dr. Ostrander graduated from the University of Michigan in 1884. He pursued general practice in Lansing for four years, during which period he also served as physician to the State Industrial School for Boys. In 1888 he became assistant physician to the Kalamazoo State Hospital. In 1909, he became assistant medical superintendent. Dr. Ostrander was president of the Kalamazoo Academy of Medicine and in 1907 he was elected President of our State Society. He served as President of the Michigan Antituberculosis Society in 1912-1914 and is chairman of the Executive Committee of that organization at the present time.

Certainly no better selection could be made for this important position. Dr. Ostrander enjoys the confidence of the entire profession of the state who extend congratulations and assure him of their hearty co-operation.

The following committees were appointed to care for the meeting of the Michigan State Medical Society in the county, August 15 to 17, this date being fixed by the council of the state society:

Arrangements—Drs. N. S. MacDonald, chairman; W. H. Dodge, W. T. S. Gregg, H. M. Joy, J. Holmes, J. R. W. Curtin, I. Lawbaugh, J. D. McKinnon.

Reception—Drs. W. K. West, chairman; A. D. Aldrich, D. E. Godwin, W. H. King, G. W. Orr, J. Rhines, A. C. Roche, M. D. Roberts, W. H. Van Slyke, W. P. Scott, I. D. Stern, P. H. Willson, Woodhall.

Entertainment—Drs. J. G. Turner, chairman; J. C. Abrams, P. D. Bourland, Cornell, R. S. Edwards. G. E. Gallen, W. W. Hodge, A. Labine, R. J. Mass, W. A. Manthei, T. S. Marshall, D. K. McQueen, J. W. Moore, J. B. Quick, G. Rees, J. E. Scallon, A. B. Simonson, D. D. Todd, A. R. Tucker.

Finance—Drs. G. A. Conrad, chairman; E. T. Abrams, C. H. Rodi.

Publicity—Drs. P. D. MacNaughton, chairman; R. B. Harkness, John McRae.

The following from the versatile pen of Dr. Rock Sleyster, Secretary of the Wisconsin State Medical Society is presented to our members for their reflection:

DIES FAUSTUS.

And Apollo the physician and Aesculapius and all the Gods of Healing grieved, for their desciples said they had not time to do the things they left undone—that their hours were long and their labors hard and the routine of each day left little time for the worship of their Gods.

So they gave to them this year an extra day—a three hundred sixty-sixth—and willed that on this day each practitioner of our ancient art shall search his heart and make amends for his past negligence.

And he who on this day, in due humility, shall right a wrong; or aid a needy brother in distress; or strive for new ideals and truth and confidence—forgetting self the while in love of brothers of the faith—shall all the year be blessed and know the joy of real accomplishment.

—St. Boostheimer.

Why let insurance companies impose on you in asking you to fill out medical certificates of disability. These companies are using you to fill out certificates that furnish them with information for their personal use—information which they require to protect their business and for which they should pay as do life insurance companies. The next time a patient presents such a blank to you request him to bring in the local agent and demand of him your fee. If it is refused advise your patient to insure in another company.

Are you finding the reports of your meetings in the pages devoted to County Society News. If not kindly remind your officers to send in the report of your meetings.

Dr. Joseph B. Whinery, of Grand Rapids, announces that he will limit his practice to office examinations and to consultations in medicine.

Dr. H. Wellington Yates was elected President, Dr. Frank Walker, Vice-President and Dr. Geo. Chene, Secretary of the Staff of Providence Hospital, Detroit.

Dr. A. H. Rockwell, of Kalamazoo was presented with a silk umbrella when he retired as Health Officer. Dr. Rockwell had served in that position for seven years.

Dr. Alexander W. Blain, Dr. Harry Pepper, and Dr. Leo E. Grajewski, of Detroit, announce the removal of their offices to 727 Jefferson Avenue.

Dr. A. B. Grant, of Albion, has resigned as local Health Officer. Dr. A. T. Hafford was elected as his successor.

Dr. H. A. Kling, of Rane, Texas has located in Montague.

Dr. R. G. Leland, of Kalamazoo, has been elected Health Officer by the local Board of Health.

Dr. R. L. Clark of Detroit has moved his office to 207 Forest Avenue, West.

Dr. and Mrs. O. L. Ricker of Cadillac are the proud parents of twin boys.

The City Council of Hastings has passed an ordinance creating a Board of Health.

County Society News

BAY COUNTY

At our regular meeting held Dec. 13, 1915 the following officers were elected for the ensuing year:

President—C. J. Grosjean.
Vice-President.—W. G. Kelly.
Secretary-Treasurer.—F. S. Baird.
Medico-Legal—Wm. Kerr.
Board of Directors—R. W. Braun, Wm. Kerr, J H. Quist.
Delegates to State Meeting.—A. F. Stone, H. N. Bradley.
Alternates.—John Keho, Frank Ruggles.

The meeting was held at the residence of the retiring president, H. N. Bradley, M.D. Forty members sat down to a very elaborate banquet. The Secretary's report shows the Society free from debt. There was an average attendance during the year of twenty-four.

The President read a paper on "The Practice of Medicine in the Early Days of Bay County" and gave a very interesting chronology of the old physicians in this county and the great handicap under which they labored. Most of these men have long since joined the great majority. Among others was the late Dr. Thomas at one time President of the Michigan State Medical Society.

This Society is in a flourishing condition. We meet every two weeks at the various residences of

the members. During the year we had the privilege of having with us such men as Udo Wile of Ann Arbor, Cyrus Darling of Ann Arbor, Wesley Taylor of Detroit, Dixon of the epileptic farm at Wajamega and many others besides many local papers.

We also had a joint meeting of the Druggists' Association of Bay County and the Medical Society. A paper was read by a pharmacist, "Relation of the Druggist to the Physician." It was decided that an effort would be made to discourage the use of expensive proprietary compounds and to stick to the use of the U. S. P. and National Formulary preparations which to a great extent has been followed out.

We also had one interesting meeting of the Dentists and Physicians at which time, Dr. E. G. Weeks, D.D.S. of Saginaw read a paper on "Orthodontia."

During the year we had the misfortune to lose one of our esteemed members, the late Dr. J. M. McGeogh, for many years a practitioner in this city.

The coming year bids fair to be a successful one.

Fred S. Bairds, Secretary.

EATON COUNTY

The Eaton County Medical Society held its first regular meeting of the year at the Temple Theater, Charlotte, Mich. A good attendance was present.

SCIENTIFIC PROGRAM.

Eugenics From a Medical Standpoint,
F. R. Blanchard, M.D., Eaton Rapids, Mich.

Paper (with lantern slides demonstrations),
I. D. Loree, M.D., Ann Arbor, Mich.

Dr. Blanchard's paper was very interesting, and was moved and seconded to have same published in the *State Journal.*

Dr. Loree's talk covered several of the pathological conditions of the kidneys and ureters, this was illustrated with lantern slides.

Following this a committee was appointed by the chairman consisting of A. R. Stealy, F. J. Knight, to co-operate with the "Universal Mother's Organization" to help make the National week a success.

G. W. Byington, Secretary.

GRAND TRAVERSE-LEELANAU COUNTY

The regular meeting of the Grand Traverse-Leelanau County Medical Society was held on Tuesday evening, Feb. 1. A large number of the members were present. The President, Dr. J. B. Martin, called the meeting to order at 8:30. Dr. J. M. Wilhelm read a most instructive paper on the subject of eclampsia. A general discussion followed the reading of the paper.

W. D. Mueller, Secretary.

KENT COUNTY

At the meeting of Jan. 26, 1916, Dr. E. W. Schnoor, and Dr. C. DeJong of Grand Rapids and Dr. A. D. Haughton of Caledonia were elected to membership. The program of the evening consisted of a talk on the cancer problem by Dr. H. J. Vanden Berg, and a paper by Dr. A. M. Campbell, illustrated with lantern, on "Surgery of the Knee Joint." Dr. D. E. Welsh also reported an interesting and unusual case of tubercular episcleritis.

At the meeting of Feb. 9, Dr. Faith Hardy was elected to membership. Dr. C. H. Johnston gave four interesting case reports: One of enlargement of the thymus; one of hypertrophy of the tracheobronchial glands; one of tuberculosis and one of post-pharyngeal abscess—all in infants. Dr. F. C. Warnshuis then read an extremely interesting and practical paper on "1034 Consecutive Cases of Industrial Surgery" giving his methods and figures in detail.

The special tuberculosis meeting on Feb. 16 proved to be a most instructive one. Dr. H. M. Rich of Detroit was the speaker of the evening, and he crowded in about as many practical points as an expert could give in a single evening. The talk was refreshingly different from the stereotyped textbook method and abounded in valuable suggestions of great value. After the meeting an informal stein party was given in Dr. Rich's honor.

Frank C. Kinsey, Secretary.

MUSKEGON-OCEANA COUNTY

PROGRAM FOR YEAR 1916.

Jan. 7—Dr. C. J. Bloom.
Jan. 21—
Feb. 4—Drs. A. Brocke and R. I. Busard.
Feb. 18—Drs. W. A. Campbell, R. G. Cavanaugh.
March 3—Drs. V. A. Chapman and J. T. Cooper.
March 17—Drs. J. T. Cramer and J. F. Denslow.
March 31—
April 14—Drs. L. N. Eames and B. R. Eastman.
April 28—Drs. W. P. Gamber and F. W. Garber.
May 12—Drs. G. J. Hartman and A. F. Harrington
May 26—Drs. I. M. J. Hotvedt and V. S. Laurin.
June 2—
June 16—Drs. B. F. Black and J. D. Buskirk.
June 30—Drs. C. Day and I. J. Drummond.
July 14—Drs. W. L. Griffin and W. L. Hercik.
July 28—Drs. G. F. Lamb and L. P. Munger.
Aug. 11—
Aug. 25—Drs. J. H. Nicholson and F. Reetz.
Sept. 8—Drs. C. F. Smith and G. L. Le Fevre.
Sept. 22—Drs. F. B. Marshall and R. G. Olsen.
Oct. 6—Drs. J. Oosting and A. B. Poppen.
Oct. 20—
Nov. 3—Drs. L. I. Powers and P. A. Quick.
Nov. 17—Drs. A. A. Smith and P. J. Sullivan.
Dec. 1—Drs. J. Vanderlaan and G. S. Williams.
Dec. 15—Yearly meeting and banquet.

The program committee desires that the members as listed alphabetically be jointly responsible for place, papers and entertainment on their respective dates.

Please report subject of papers and place of meeting to the Secretary two weeks before date assigned.

Members outside of Muskegon are given the preference of summer meetings.

At every fifth meeting an outsider will be invited to present a paper.

I. M. J. Hotvedt, President.
J. H. Nicholson, Vice President.
C. J. Bloom, Secretary.

SAGINAW COUNTY

The annual meeting of the Saginaw County Medical Society was held Jan. 18, 1916 at the Elk's Temple. Various items of business of local importance were disposed of.

Dr. Chas. W. Hitchcock of Detroit presented an instructive paper on "The Modern Diagnosis and Treatment of Syphilis of the Nervous System."

All officers were re-elected to serve for 1916.

President—Jas. W. McMeekin.

Vice-President—Arthur Griggs.

Secretary-Treasurer—A. R. McKinney.

Trustees—C. H. Sample, W. L. Dickinson, Robt. McGregor.

Medico-Legal Representative—W. J. O'Reilly.

Dr. Wm. L. Miller was elected to membership.

There was a large attendance and prospects are bright for the coming year.

A. R. McKINNEY, Secretary.

ST. CLAIR COUNTY

The regular meeting of the St. Clair County Medical Society was held Thursday evening, Jan. 20, 1916 at St. Clair, as guests of Drs. Thompson and McPherson of St. Clair and Drs. De Gurse and Armsbury of Marine City.

After a very enjoyable dinner the President introduced Drs. H. McCallum of London, Ont. and W. J. Cassidy of Detroit, as the speakers for the evening.

Dr. McCallum read a very interesting paper on the "Golden Rules of Medicine and Surgery from Person Observation."

Dr. Cassidy gave a paper on the "Routine use of the Cystascope and X-ray of Stones in the Urinary Tract" and certainly was appreciated by all.

A vote of thanks was extended to the speakers of the evening by the Society.

W. RYERSON, Secretary.

Book Reviews

AN AUTOBIOGRAPHY. By Edward Livingston Trudeau, M.D., Octavo, pages 322. Illustrated. Cloth $2. Lea & Febiger.

Trudeau's work in the realm of medicine is well known; his death deprives the profession of one whose prestige and influence was great. His wonderful efficiency in behalf of humanity is so generally recognized that this narrative of his life, development, purpose and accomplishments possesses a deep interest. It is told in candor and simplicity. This volume will prove to be entertaining, inspiring and instructive.

PAINLESS CHILDBIRTH, EUTOCIA AND NITROUS-OXID-OXYGEN ANALGESIA. By Carl Henry Davis, Associate in Obstetrics, Rush Medical College, Cloth 134 pp. Price $1.00. Forbest & Co., Chicago.

Received.

OBSTETRICS. A Practical Text Book for Students and Practitioners. By Edwin Bradford Cragin, A.B., A.M., (Hon.) M.D., F.R.C.S.; Professor of Obstetrics and Gynecology, College of Physicians and Surgeons, Columbia University, New York; Attending Obstetrician and Gynecologist to the Sloane Hospital for Women; Consulting Obstetrician of the City Maternity Hospital. Assisted by George H. Ryder, A.B., M.D., Instructor in Gynecology, College of Physicians and Surgeons, Columbia University, New York; Assistant Attending Obstetrician, Sloane Hospital for Women; Associate Surgeon, Woman's Hospital, New York. Octavo, 858 pages, with 499 engravings and 13 plates. Cloth, $6.00 net.

The author's eminence as a specialist in the fields of Obstetrics and Gynecology, his remarkable success as a practitioner and an instructor, and his exceptional advantages and experience as Attending Obstetrician and Gynecologist to the Sloane Hospital for Women, combine to make the appearance of this new work an event of great interest and importance to the medical world.

During a protracted service as medical head of the Sloane Hospital for Women, where over 1,800 deliveries annually occur, the author has enjoyed exceptional opportunities for observation and experience in obstetrics; and for several years he has felt a growing sense of the duty of placing before the profession and students of medicine the methods of this institution and the results obtained. The present text-book of Obstetrics has seemed to him the most rational and perhaps the most useful way in which to meet this obligation. The work, in the methods advocated, is based upon the statistical results of the Sloane Hospital and upon the experience gained by the author in the hospital and in private practice. Another object of the work has been to present American statistics in obstetrics which, it is believed, represent the most extensive and careful records available in this country.

The fact that many text-books now before the profession, although very valuable for reference, are too large for the undergraduate student, has been appreciated by the author, and he has covered the subject concisely, eliminating all unnecessary discussion.

Professor Cragin has written a book which will be found not wanting in any essential feature either as a student's text-book or a practitioner's reference work.

A TREATISE ON THE PRINCIPLES AND PRACTICE OF MEDICINE. By Arthur R. Edwards, M.D., Professor of the Principles and Practice of Medicine and Clinical Medicine and Dean of the Northwestern University Medical School, Chicago. New (third) edition, thoroughly revised. Octavo, 1022 pages, with 80 engravings in 23 full-page plates in colors and monochrome. Cloth, $6.00, net. Lea & Febiger, Philadelphia and New York, 1916.

The merit of Professor Edwards' work has won the practical recognition of a demand for a third edition. It is the product of an experienced physician, a notable teacher, and an unsparing worker. No less efficient combination in the person of one man could adequately exhibit present-day medicine in a single volume of convenient size. This he has done, and in excellent perspective, making a well-proportioned book, properly directed, as he says in the preface; that is, with everything necessary, and everything leading up to the final object of medicine, namely, treatment. Thorough systematization is employed for brevity and ease of consultation, and for the even more important advantage thereby secured that facts arranged in their natural order lead into each other and impress the underlying reasons on the reader's mind. Critical study of his own work, and careful consideration of the reviews, have led the author to adhere to the plan and features that have proved so popular, but he has spared

no labor in improving it to the utmost. The work has been practically rewritten to secure increased clearness and conciseness. All the real advances throughout this immense domain have been incorporated. Particular attention has been given to therapeutic details in accordance with the recent awakening of the profession to the importance of logical treatment. Numerous new preparations and modified dosages, particularly for children, are explicitly specified. In a word, all classes of readers, students and practitioners alike, will find this very broad and skilful work admirably suited to their requirements.

A MANUAL OF HYGIENE AND SANITATION. By Seneca Egbert, M.D., Professor of Hygiene and Dean of the Medico-Chirurgical College, Philadelphia. New (6th) edition, thoroughly revised. 12mo, 525 pages, with 141 figures and 5 plates. Cloth, $2.25, net. Lea & Febiger, Philadelphia and New York, 1916.

The frequency with which successive editions of Professor Egbert's book are exhausted and new ones demanded places its value and standing beyond question. The author has responded to this renewed opportunity by effecting such changes as were needed to represent the latest developments in a very active subject. Mankind is awakening to the unapproached importance of anything affecting the public health, and it is now expected that every physician shall know and apply the principles of preventive as well as curative medicine. An authoritative work covering the essentials of this great subject clearly and briefly therefore interests medical students and practitioners as wel as specialists in hygiene and sanitation.

SEXUAL IMPOTENCE. By Victor G. Vecki, M.D., Consulting Genito-Urinary Surgeon to the Mt. Zion Hospital, San Francisco. Fifth edition, enlarged. 12mo. of 405 pages. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, $2.25 net.

This is a rational discussion of a subject of great importance. A careful study of the author's discussion will enable one to obtain a knowledge that will permit him to solve difficult problems. This is a work and subject that merits a broader consideration. Dr. Vecki has exhibited good judgment and his conclusions are trustworthy.

PRINCIPLES AND PRACTICES OF PHYSICAL DIAGNOSIS. By John C. DaCosta, Jr., M.D., Assistant Professor of Medicine, Jefferson Medical College, Philadelphia. Third Edition. Thoroughly revised. Octavo of 589 pages with 243 original illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, $3.50, net.

By selective deletion and recasting of the text this third edition preserves its original character while also presenting considerable new matter.

Vertebral percussion, sphygmomanometery, electrosardiography and gastric radiography receive due attention; mediastinal pleurisy, lobar type of bronchopneumonia are described and cardiac diseases are discussed from a modern and clinical viewpoint.

The work justifies its purpose in presenting the principles of physical diagnosis. It is by far the work that will supply the student practitioner with the greatest amount of information and assistance in arriving at a proper diagnosis.

CANCER OF THE STOMACH. A Clinical Study of 921 Operatively and Pathologically Demonstrated Cases, by Frank Smithies, M.D., Gastro-enterologist to Augustana Hospital, Chicago. With a Chapter on the Surgical Treatment of Gastric Cancer, by Albert J. Ochsner, M.D., Professor of Clinical Surgery in the University of Illinois. Octavo of 522 pages with 106 illustrations. Philadelphia and London: W. B. Saunders Company, 1916. Cloth, $5.50 net; Half Morocco, $7.00 net.

This new work sets forth the facts which are considered valuable from a study of 921 operatively and pathologically demonstrated instances of gastric cancer. As such the monograph at once commands our respect and confidence.

The subject is excellently presented, the illustrations are pertinent, the case histories elucidate the conclusions, and thus produce a text that fully presents the advances made in the past decade. The work is a most complete presentation of our present understanding of cancer of the stomach. It is bound to receive an eager, reception and take its place as a reliable authoritative work. It should be found in every physician's library.

SURGICAL OPERATIONS WITH LOCAL ANESTHESIA. Second Edition by Arthur E. Hertzler, A.M., M.D., Ph.D., F.A.C.S., Surgeon to the Halsted Hospital, Kansas; Swedish Hospital, Kansas City, Mo.; General Hospital, Kansas City, Mo. 327 pages; 173 illustrations; cloth bound, price $3.00. Surgery Publishing Company, New York.

The rapid sale of the first edition covering minor surgery and the demand for a more complete work upon the subject covering both major and minor surgical work, has induced Dr. Hertzler to present this second volume, which for completeness as to detail and price we believe places it in a class by itself among those text books upon this most interesting and growing subject.

Dr. Hertzler's surgical experience and his work with local anesthesia particularly fits him as an authority upon this subject and thus the second edition of his book places within the hands of the doctor a manual which for completeness and comprehensiveness particularly recommends it.

From a review of this book Dr. Hertzler seems to have overlooked no point of major or minor importance. The large number of illustrations clearly places up to the eye of the reader the text of the book and both the general practitioner and surgeon will appreciate this work as a reliable guide in their operation work under local anesthesia.

Miscellany

IT PAYS THE MANUFACTURER TO MAINTAIN ETHICAL STANDARDS

The notice of the removal of the Dextri-Maltose manufacturing plant from Jersey City to Evansville, Ind., published in one of our advertising pages, deserves more than passing attention. It furnishes evidence of the natural growth of a manufacturing enterprise which is now vacating its old factory with 18,000 square feet of floor space for a new location in the Central West and in a new plant with 300,000 square feet of floor space—sixteen times larger than the old one.

This removal from a comparatively small to a

very large housing also affords striking proof that success awaits the manufacturer who produces something the physician really wants, and markets his products in accordance with the standards set up by doctors for the sale of products they use. The first commandment for the direction of the manufacturer under these standards is: "Thou shalt not offer to both physician and public, by advertising or otherwise, anything which requires medical skill to properly use."

This commandment has been ignored by some manufacturers of infant foods, who have persistently educated the pulic with pseudopediatrics, thereby tending to increase infant mortality and hampering the physician in the practice of scientific, or even rational infant feeding.

But ultimate reform in the manufacture and sale of infant foods was as inevitable as the reform that has taken place in the sale of pharmaceutical products. The day of mystery and tradition in infant feeding is passing rapidly.

The recent simplification of bottle feeding, rendering it possible, without impractical complication, for the family physician to successfully adapt the diet to the individual baby, has brought about a strong conviction that the direction of infant feeding is distinctly the proper work of the physician.

This conviction has in turn created a demand for forms of carbohydrate foods which can be freshly prepared in exact proportions to meet clinical indications; and for their sale without directions for use, so that the physician can personally control the administration of the food.

The firm, which announces herewith its removal from the east to larger opportunities in the west, early recognized the requirement by the medical profession for a product used in infant feeding, made and sold exclusively for physicians, with no appeal, nor information to the public.

This firm deserves no special commendation for the course it has pursued, it being its duty to follow it. Reference to the sales of Dextri-Maltose is made simply to show that it is remunerative for manufacturers to treat the medical profession fairly.

Stuart's Calcium Wafer Compound.—The A.M.A. Chemical Laboratory reports that Stuart's Calcium Wafers Compound, consists essentially of calcium sulphide and aloes or aloin. Like other so-called blood purifiers, it is essentially a cathartic (*Jour. A.M.A.*, Jan. 1, 1916, p. 51).

Strontium Salicylate not Superior to Sodium Salicylate.—In a series of carefully controlled trials, carried out in the Lakeside Hospital, Cleveland, M. A. Blankenhorn shows that strontium salicylate possesses no advantages over sodium salicylate as regards either therapuetic efficiency or freedom from undesirable by-effects. The salicyl content of strontium salicylate is about four-fifths that of sodium salicylate. This smaller salicylate content may have contributed to the notion that strontium salicylate is less likely to cause salicylism. This notion may have also arisen from the fact that the more expensive preparations are likely to be given in smaller doses than the cheaper sodium salicylate. That the strontium salt of salicylic acid has no advantages over the sodium salt, has also been pointed out in the report of the Council on Pharmacy and Chemistry on Rheumalgine (*Jour. A.M.A.*, Jan. 29, 1916, p. 331 and 362).

So-called Secretin Preparations.—At the request of the Council on Pharmacy and Chemistry Professor A. J. Carlson of the University of Chicago has studied the action of secretin when administered by mouth or directly into the intestine and also investigated the secretin content of certain alleged secretin preparations. Carlson and his co-workers, like all previous investigators, found that secretin, when given by mouth or introduced even in enormous doses directly into the intestine, is entirely inactive. Further, they were unable to demonstrate the presence of secretin in samples of Secretogen and another supposed secretin preparation (Duodenin) bought on the open market, except that one bottle was found which contained a little secretin. Carlson and his co-workers conclude that there is as yet no reliable evidence that lack of secretin is a primary or important factor in any disease and that, should this be established, secretin therapy, to be effective, must be intravenous. The Council endorsed the work of Professor Carlson (*Jour. A.M.A.*, Jan. 15, 1916, p. 178 and 208).

Tiger-Bone Therapy and "Clinical Experience."—In China the administration of powdered tiger-bone is, or was, a favorite form of treatment of supposed cardiac weakness. Since many patients have recovered after taking tiger-bone and no one has proved that they might not have died had they failed to take it, "clinical experience" stands back of the treatment. Not satisfied with the assertion of the dealers regarding the genuineness of the drug the conscientious Chinese physician subjects the tiger-bone to a kind of physiologic standardization. He offers the bone to a dog! If it is an ox-bone—a frequent form of substitution—the dog will seize and eagerly gnaw it, whereas, according to the teachings of Chinese pharmacognosy, if it is a tiger-bone the dog will depart hurriedly with his tail between his legs. Much of our so-called clinical experience is not much better than that of the Chinese "clinical" evidence for tiger-bone therapy. Also, many physicians are wont to accept the statement of drug dealers without even making an attempt to check the claimed identity of the advertised remedy (*Jour. A.M.A.*, Jan. 15, 1916, p. 197).

Mixed Antityphoid and Antiparatyphoid Inoculation.—The use of any mixed vaccine is to be looked on askance. The simultaneous inoculation against typhoid, paratyphoid A and paratyphoid B needs further study in many directions. Reason and judgment at present would seem to approve the idea of using a mixed vaccine for the typhoid and paratyphoid infections. If a practical method of using this mixed vaccine can be devised, it seems to promise results (*Jour. A.M.A.*, Jan. 15, 1916, p. 193).

Fulton's Compound.—A "Bulletin" sent out by the promoters of Fulton's Renal Compound and Fulton's Diabetic Compound gives an account of the alleged good results of the treatment in the case of a Mr. J. J. Pennepacker. The columns of a local newspaper announce the amputation of this man's leg for diabetes (*Jour. A.M.A.*, Jan. 29, 1916, p. 373).

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Original Articles

THE VALUE AND IMPORTANCE OF MATERNITY HOSPITALS.*

E. Gustav Zinke, M.D., F.A.C.S.
CINCINNATI, OHIO.

Synopsis.—Existing conditions in obstetric practice. Indifference of the profession alone responsible for the ignorance of the laity. My own experience with the practice of obstetrics. Every physician no matter how favorable his experience with obstetrics may have been, should always realize that pregnancy, from the beginning to the end, is, under the most favorable conditions, an event of grave importance. If a given case portrays signs or symptoms indicative of complications before or during labor, the patient should be conveyed to a hospital before it is too late to bestow upon her the full benefit of what the art and science of midewifery affords under the most favorable condition. Are we ready to admit that the present practice of midwifery cannot be improved? Must we go on with a practice which annually impairs or destroys a number of lives? What are the objections of the profession and laity to the practice of obstetrics in hospitals? Hospital deliveries, attended by well trained obstetricians, assistants and nurses, are the only means by which the present still high maternal and foetal morbidity and mortality can be effectually and permanently reduced.

For more than twenty years the writer has publicly, in writing and in the lecture-room, advocated the necessity of maternity hospitals. He has repeatedly set forth the advantages which will accrue to women in labor, the child to be born, the benefits to mankind, the comfort and satisfaction to the obstetrician in attendance upon these cases in maternity hospitals. In well-conducted lying-in hospitals, undoubtedly, the suffering of the mother during labor may be greatly allayed and abridged, and what is of equal, if not more importance, the maternal and foetal morbidity and mortality may be lessened to a degree not obtainable when child-deliveries are conducted in the patient's home or in hospitals where all kinds of diseases and accidents are treated.

*Read before Section on Gynecology, M.S.M.S., Sept., 1915.

No obstetrician of experience, having the interest of mankind, especially suffering womankind, at heart will deny the truth of the above statement. Forty years of almost daily observations in obstetrics have convinced the writer that this states the real condition of things.

Notwithstanding, the science and art of midwifery has never been more complete and better understood than now. There is a marked improvement in the practice of obstetrics, especially in the larger cities with hospitals and medical schools. But even in these localities, but more particularly in smaller towns, villages, and in country districts everywhere, the practice of obstetrics is not what it might or should be to-day. More than that, in many—too many—instances the management of pregnancy, labor and confinement does not differ much from the practice in vogue forty years ago. And it must be admitted that, occasionally, scenes are observed in the confinement-chamber which remind one of medieval days, and for which there is no excuse, but an indifference on the part of the medical profession in particular, and ignorance on part of the laity in general.

Little can be said against the modern method of teaching obstetrics. There are, indeed, comparatively few subjects of practical value connected with the science of midwifery which should not be well understood. Perhaps it is not too much to say that this subject was never better taught than at present.

Why, then, this persistent indifference of the profession, which alone seems responsible for the ignorance of the laity? Permit me to mention the principal reasons:

It dawns upon the medical student long before he completes his course of study that the practice of obstetrics involves grave responsibility, hard work, long hours and little or no pay. The young practitioner soon realizes the truth of this, and many of them, as they gain in experience and advance in years, abandon the practice of midwifery and turn their attention to other less laborious and more profitable fields in medicine and surgery.

Thus it happens that many medical students study obstetrics only just enough to meet the requirements for graduation. They never intend to practice it. Other young practitioners accept obstetric cases and devote much time and attention to them; but they soon tire of the practice and lose interest in the work, because of the responsibility and worry, as well as the meager remuneration therefor. Another set of men are so fortunate in the beginning of their professional life as to encounter only so-called easy cases. Because of their accidental success they soon believe themselves masters in obstetrics, neglect the study of it and become careless and indifferent. When subsequently they encounter troublesome cases they send for assistance and consultation, and no matter what the result may be, they are always sure to have done their full duty in the case before them. This class of practitioners is by no means small, and most of them regard labor cases lightly. And these are the men who most unreasonably oppose hospital deliveries.

There are comparatively few men among the general practitioners who continue the study of obstetrics and who become experts scientifically as well as practically. Though they are frequently handicapped in the performance of their work, because of lack of proper surroundings and of trained assistants, many of these able men willingly persist in treating difficult and complicated labor cases at the homes of patients, and not a few strenuously oppose sending obstetric patients to hospitals for confinement.

The problem of the *indifference of the profession* is easily solved when we consider the first four classes of the medical men just described; but it is absolutely impossible to explain why some of the men belonging to the fifth class persistently refuse to send their obstetric cases to maternity hospitals when conditions unmistakably indicate impending complications, and when hospital facilities are within easy reach.

Thirteen years ago the writer read a paper on "The Practice of Obstetrics" in the Section of Obstetrics and Diseases of Women of the American Medical Association[1] in which the confinement of women in hospitals was earnestly advocated as the best means of reducing the maternal and foetal mortality and morbidity resulting from labor. Those who discussed my paper not only agreed with me, but created the impression that the paper contained nothing new, and that the views expressed therein were commonly accepted. The men who spoke were from New York.

Today we know, that while in the Eastern cities the practice of delivering women in hospitals is more frequent than in the Middle West, the far West and in the South, it is by no means as frequent as it should be, and the majority of practitioners all over the country, New York not excepted, consider "hospital deliveries" nothing more than a "modern fad." It is strange how little the subject of hospital deliveries has been seriously considered by the average general practitioner.

The speaker has completed his fortieth year in the practice of medicine; sixteen of these years have been devoted to general practice and the remainder to the teaching and practice of obstetrics and gynecology. He has had occasion to observe more than 4,000 labor cases. This includes all the cases attended by him in private practice, those in consultation with others, as well as the cases delivered at the Ohio Maternity Hospital and Out-Door Obstetric Clinic of the Medical Department of the University of Cincinnati. This experience has made him intimately acquainted with the science as well as the practice of obstetrics of the past and present. He has witnessed scenes in the confinement-chamber, charming because of the pleasant environments of the home and the presence of dear friends, and because everything in connection with the case occurred without much suffering or dangerous accident and terminated with an ease and satisfaction so beautiful that heaven itself could not improve upon it. You have all witnessed the like. No wonder that those familiar with scenes like these and similar ones, though perhaps not quite so attractive, speak ardently in favor of deliveries at home. Fortunately or unfortunately, there are many cases like the above—fortunately, for those who escape unharmed the treacherous sea of pregnancy, the reefs and locks of labor and the storm of the puerperium; unfortunately for those, who, because of former fortunate experience of their own or others are lulled in the sweet hope of a safe passage and neglect to protect themselves from impending perils.

Some, if not all of you, know from observation how a home filled with hopeful expectation, joy and happiness may suddenly be turned into one of horror-stricken consternation and deep mourning. The laity is no stranger to these sad events. Every community records, annually, tragedies occurring in the *chambre d'accouchement,* many of which, it cannot be denied, might have been averted had the case been

1. St. Paul meeting.

carefully studied in advance and the necessary precautions taken.

It has never been my desire to create the idea that all the calamities that may befall a woman during pregnancy, labor and confinement can be prevented at all times; only that the number of mournful fatalities connected with childbearing can be greatly reduced and a great deal of the frequent invalidism now following labor may be avoided.

Every physician, no matter how favorable his experience with obstetrics may have been, should always realize that pregnancy, from the beginning to the end, is, under the most favorable conditions, an event of grave importance. Like a soldier who goes into battle, the physician nor the mother knows, whether death will claim her or whether she will be crippled for life, or go through the ordeal unharmed a happy mother and a better woman. There are many doctors, the world over, who look upon pregnancy and all pertaining to it as neither a serious nor difficult proposition and consequently, the laity thinks less of it still. It is well known that, even in these days, a physician is not always called to a case before labor has begun; and also that some physicians, when they are consulted before the end of term, do not deem it nccessary to make a careful examination or investigation of the case, and thus they have little or no advice to give except, perhaps, to "keep the bowels open," "be careful not to work too hard," and "call me as soon as the pains begin."

The hygiene of pregnancy is, though of the utmost importance, too often ignored. If not, it is more or less neglected. The same may be said of *pelvimetry,* the *diagnosis of the attitude of the fetus in utero,* as well as the *preparation for labor* previous to the event.

To remedy these shortcomings, the practice of obstetrics should be more in the hands of specialists of this department. The reason we have not as many specialists in obstetrics as we have in the other branches of medicine and surgery lies in the fact that a great many who bear the title of M.D. accept obstetric cases because of the expected fee and not because of their interest in obstetrics. It is a remarkable fact that many women are delivered by men who follow other specialties; men who openly confess they do not like obstetrics, and that they know little or nothing of midwifery. But the prospect of a handsome fee is frequently a great temptation and then these men are willing to take a chance. Thus the obstetric specialist, if he confines himself strictly to his specialty, soon discovers that it is hard for him "to keep the wolf from the door." The teacher of obstetrics is the logical specialist; but because of the custom of the day, if he does not do general work, to secure for himself and his family respectable living, he practices, in addition to obstetrics, gynecology or pediatrics, or both. The result is that obstetrics as a specialty pure and simple does not exist. But there are a few who do make midwifery a special study, though they do not practice it exclusively. The truth is obstetrics and gynecology should never have been divided. A good obstetrician is always a gynecologist. A good gynecologist is by no means always an obstetrician. It is the duty of all who accept care of pregnant women, not only to be thoroughly familiar with the hygiene, physiology and anatomy of gestation, of labor and the puerperium, obstetric diagnosis and prophylaxis, but they should also give the patient the full benefit of the intimate knowledge these subjects yield.

When, in the course of an examination and treatment of a case, it is discovered that the patient cannot be successfully taken care of at home either before, during or after labor, as is often the case in tenement houses, overcrowded districts or distant parts of the country, the patient should be advised to go to a good hospital. The same may be said of all cases of threatened or already existing complications. *Put the patient where you or someone else can give her the necessary attention, and, if the case requires it, the advice and assistance of an expert.* In other words, confinement patients should be treated like other patients whose ailments assume, or threaten to assume, a serious aspect, as, for instance, certain surgical cases which may in time require the skill and experience of a specialist.

Is it not now the custom all over the civilized world to send all difficult and complicated cases, medical and surgical, while the patient is still in good condition to hospitals? Why should we hesitate to do the same with the child-bearing woman?

I firmly believe that every pregnant woman should avail herself, if convenient, of the advantages of a hospital when the time of giving birth has arrived. At the hospital she is surrounded by security not obtainable at her residence. No matter what difficulties or complications may arise, they can be more promptly and more effectually met in a maternity hospital; not so in the patient's home.

It is readily admitted that, ordinarily, in normal cases, the home is perhaps as safe a place as the hospital. *But what of the help and*

accommodations at home as compared with the conveniences of a hospital? What of the expense? What of the physician who burdens himself with the responsibility of the work and worry that the management of a labor case at home demands? Those of you who have spent years in the private practice of obstetrics and later delivered women in hospitals will realize the difference? Home deliveries always demand more of the physician's time; the management of the case is more difficult and quite often unsatisfactory in the end. At the hospital even grave and complicated cases may frequently be conducted with comparative ease, entire satisfaction and unnecessary loss of time

There was a period in history when hospitals were quite *unpopular with the profession,* and more so with the laity. There were good reasons for this. But with the advent of antisepsis, asepsis and the trained nurse there came a vast change for the better. The mortality of hospitals, formerly very high, has been notably reduced. For this reason many general practitioners, as well as the specialists, send the cases requiring particular care early to a hospital for treatment. In some instances, at the suggestion of the family physician, patients willingly travel hundreds of miles to obtain the needed hospital accommodations, and sometimes for conditions far less serious than a complicated case of labor.

Unless maternity hospitals become more popular and physicians more painstaking in the management of the pregnant, there is little hope for progress in the practice of midwifery in the near future. To make the hospital practice of obstetrics more popular, every physician of good repute should have the privilege of the hospital. The advantages and prerogatives of the hospital should not be limited to a staff of a favored few. The doors must be open to all practictioners in good standing. The Bethesda Maternity and the Obstetric Wards of the German Deaconess Hospital of Cincinnati are conducted on this plan.

In my opinion, the hospital is the best and safest place for women to pass through the ordeal of labor. This does not mean that every woman pregnant cannot be safely confined at home. It does mean, however, *and this is what must be driven to the heart and mind of every accoucheur, wife and husband, that if a given case portrays signs or symptoms indicative of complications before or during labor, the patient should be conveyed to a hospital before it is too late to bestow upon her the full benefit of what the art and science of midwifery afford.* This, in turn, means that the patient should present herself to the physician early in her pregnancy, the earlier the better. *If he is competent and does his duty,* everything will be done to secure for her the best opportunity to evade the dangers that may jeopardize her health or life and that of her offspring.

The most essential points that should be determined in every case of pregnancy, as early as circumstances and conditions will permit, are:

1. Does pregnancy really exist? If so
2. Is it intra-uterine?
3. Is the patient well or is she the victim of some disease or deformity?
4. Is the pelvis sufficiently ample to permit of the passage of a full-term child?
5. What is the attitude of the child in utero?
6. Are there indications of an ectopic implantation of the placenta?

In the great majority of cases every one of these six points can be readily determined. Should it be impossible to ascertain the foetal attitude, it may possibly mean a faulty or a complex presentation, and the patient should be advised to go to a hospital for that reason.

If it is found that all is as it should be, and that during the further progress of gestation all continues well, the case may be satisfactorily treated at the patient's home, provided it is possible to secure the necessary aseptic conditions, that the usual preparations can be made for labor and the reception of the child, and that sufficient intelligent or trained help is to be at the physician's disposal. We know very well that, not infrequently, nature will do her work perfectly in the absence of every previous preparation on part of mother, nurse or physician; but not one of us has the right to depend upon nature alone, even under the most favorable environments.

If, on the contrary, it is found that the patient is not well, that she is not free from disease or deformity, that the pelvis is contracted or not sufficiently ample, that the presentation and position of the child is unfavorable, or that the placenta appears to be attached to the lower uterine segment, the case demands extra care, and it becomes merely a question of time and wisdom when it is best to take the patient to a hospital. An intractable or gradually increasing anemia, marked and continuous albuminuria, lesions of the heart or any other depressing constitutional disease, are conditions which should always cause serious apprehensions and

commend the hospital as the safest harbor in which to weather the approaching storm.

There are still too many of the unfortunate women, victims of one or several of the above mentioned complications, kept at their homes for treatment and delivery upon the advice of the medical attendant. Despite what has been said and written during the past decade he still stands ready to cope with adverse circumstances and perplexities with a heroism that would challenge admiration were it not for the fact that he might do more and much better for his patient, had he availed himself of the benefits of a hospital at an opportune moment. As it is, too often everything is done, or attempted, at the patient's home. Sometimes both mother and child escape the waves and whirlpool of a stormy labor, and live; the former perhaps destined to a life of invalidism, the latter to a short existence. Sometimes the life of one or both will be sacrifieed at once. In some instances the curtain closes the tragedy while the unfortunate patient is being conveyed to, or shortly after her arrival at, the hospital.

Is it impossible to improve the present practice of midwifery? Must we continue with a custom which annually cripples or destroys a number of lives? Shall we continue a mode of action begotten of ignorance, and maintained by sentiment without further effort to change for the better?

There are to-day a number of professional men who advocate maternity hospitals. But few have had the courage to speak out openly in the past. Ten years ago the speaker stood alone in his own community and his own state. It is, indeed, remarkable, and in the light of our present knowledge and recent progress in medicine and surgery, altogether incomprehensible, why there should still be objeetions, especially on the part of the profession, to the practice of obstetrics in hospitals.

Physicians continue to argue that there is more danger from sepsis in hospitals than in the patient's home. It cannot be denied that septic cases will be found at times, though not always, in hospitals; but it should be understood that, in nearly every case, the sepsis developed before the patients were admitted, and that they were taken to a hospital that their lives might be saved. If patients have a better chanee to recover from septie complications at the hospital than at home, it follows that in hospitals it is easier to protect patients against infection. The author has observed cases of labor in which sepsis followed, primarily, confinement at a hospital. He has seen quite a number of cases of profound "home-made" puerperal sepsis brought to the hospital and recover and not a few patients who died of this complication at home for the want of proper care. In the hospital the patient is surrounded by a security not obtainable at home, because any of the difficulties or complications that may arise can there be more promptly and more effectually met.

The prejudice of the laity against hospitals is far less marked today than formerly. Intelligent people know that more can be done for the sick in such institutions than at home, and that the results accomplished in them are much more satisfactory. This applies as well to obstetrics as to surgery. However, ordinarily, women are not willing to go to a hospital for the purpose of confinement. They do not readily appreciate the reasons why the baby should not be born with safety at home. Do not the great majority of women promptly recover from the effeets of labor when delivered at home? Are not most babies born alive and live, even when born under difficulties and in surroundings not exactly favorable to the occasion? Yes, but only to a limited extent.

Let us put aside for a moment those cases in which one or both lives are lost immediately or some time after labor. Let us consider only those in which, seemingly, all went well at the time of or shortly after the birth of the child. Has any one kept an accurate account of the invalidism with which women become afflicted after they have had one or several children in an apparently natural manner? We refer here to the invalidism, the direct result of a want of care during labor and the puerperium. No record worthy of consideration has ever been kept of these cases; but we may judge of the frequency with which ill-health follows labor by the prosperity of the numerous gynecologists the world over. No doubt, in some instances, the fault lies with the attendant. But what of those cases in which the attending physician is not only competent and even assiduous in the performance of his work, yet because of the poor and insufficient equipment of the home is unable to bestow upon both mother and child all that might be done were they more advantageously situated in a hospital? It has always been the object of the writer not to discuss the eareless or incompetent practitioner, but the conditions which prevent able and conscientious obstetricians from doing their best at all times.

Does it not seem proper that all women, whose homes are ill-suited to conduct a case of labor properly, should be induced to go to a hospital

when the time of giving birth has arrived, and to remain there until they have recovered from the effect of it and until involution of the genitalia is so far advanced that the return to home and work will not interfere with the completion of this process? It is admitted there can be no objection to this; but it is asked: "Where are there hospital facilities sufficient to follow out your advice?" If we are convinced that the women just spoken of are better off in a hospital, in order to obtain for themselves the full benefit of what the science and art of midwifery can do for them, it is our duty to educate the people and persist in advocating, publicly, the building of hospitals for this purpose.

This is not only a question of individual safety so far as the child-bearing woman is concerned, but at this very time of the world's history more than ever one of social and national economy. A healthy woman means a helpful wife, a better mother, also a better husband, better children and a better and happier home. It has been said that the strength and safety, prosperity and longevity of a nation depend upon the character of its homes and the number of healthy children therein. Only for this, and for this alone, where would Germany be today? This is not only true, but should be a sacred altruism with us. The building and frequent use of maternities, will to a great extent prevent afflictions that now follow so often in the wake of motherhood, and thus prove themselves a blessing to our homes and one of the greatest boons to the country. There is no better argument *why maternity hospitals are a public necessity.*

One of the principal causes of the much spoken of "race suicide" is, unquestionably, the fear women have of losing health or life if they submit to the trials of maternity; though not infrequently, in the desperate attempts of ridding themselves of the product of conception, they succeed in destroying health and sometimes, in causing untimely death.

The introduction of antisepsis into maternity hospitals is alone responsible for the happy fact that the much-dreaded child-bed fever has almost entirely disappeared in these institutions. The same cannot be said of confinement cases conducted at the home of the patient, and it is difficult to understand why physicians counsel against hospital deliveries, and why women who lack the most necessary accommodations at home are afraid to be delivered in a maternity.

Fifty years ago, the mortality of puerperal fever fluctuated between 4 and 5 per cent. (and sometimes more) in the various hospitals and clinics. But where antisepsis has been conscientiously practiced during the past twenty-five years only one out of a thousand patients dies of septic causes in Germany.

The mortality of preventable child-bed complications is far greater in city and country practice than in maternities and hospital clinics. There can be no doubt of the causes. Midwives or physicians are usually not called until the last moment, and it sometimes happens that neither of them possess sufficient knowledge or natural aptitude. The conditions in this respect are particularly unfavorable in the country and in tenement houses in the city, where want of room and lack of cleanliness go hand in hand with wrong and insufficient nursing, inexperienced and unskillful obstetricians. All this affects the course and termination of labor and the puerperium unfavorably for both mother and child, and to the disadvantage of home and happiness as well as the welfare of the community at large. (Leopold).

According to Leopold, 6,000 deaths from peurperal causes were recorded over the entire German Empire in the year 1906 and of these 1,290 died of septic infection.

It is impossible to obtain reliable statistics concerning deaths during or soon after confinement in this country. Certain it is that, whatever the number may be, it will not fall short of, but probably exceed, the puerperal mortality rate of Germany.

Leopold, in speaking of this death rate as observed in his own country, says: "The war against such a mortality" (to say nothing of the morbidity) "should be carried on much more energetically than the war against smallpox and cholera. If every confinement case were attended by a well-trained nurse, a capable obstetrician and in surroundings approaching those of a maternity hospital, both the mortality and the morbidity of the confinement-chamber could be greatly reduced."

The practice of obstetrics today is not what it might be and what it ought to be. It can be improved in many ways. It is one of the important duties of the profession everywhere, to educate people so that they cannot fail to recognize the necessity of erecting public maternities. Years will pass before we will have them in sufficient number. Our duty is plain.

He who is familiar with the history of medicine generally, and of obstetrics particularly, knows that it is not any easy task to make innovations and change old customs. In the consideration of this subject personal interest

must be discharged. The question, *how will the change affect this one or that one?* must not be thrown in the balance. Only one motive must actuate us all: *Whatever is best for suffering womankind, that must we do.*

THE PRIMARY AND END RESULTS IN INOPERABLE CANCER OF THE CERVIX TREATED BY THE CAUTERY METHOD.*

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In considering a method of treatment of inoperable cancer of the uterus I realize full well that I am dealing with an almost hopeless condition as far as the ultimate outlook for the patient is concerned. All of you are only too familiar with the clinical picture of far advanced carcinoma of the uterus, the odor alone due to the infected sloughing, carcinomatous tissue enables you to make your diagnosis. Add to this frequent or continuous hemorrhage sufficient to keep the patient in a weakened condition, unable to help herself, constant dull nagging pain, and a despondent mental attitude from the fact that she has no hope, and what more pitiable condition can we imagine for a refined and sensitive patient. While the prognosis is always bad yet the patient has the right to expect that she may reach her end with the minimum of suffering to herself, her friends and relatives, and even perhaps gain respite for a few months or even years.

With this end in view many methods have been devised for the treatment of inoperable cancer of the uterus. Among them several deserve mention. Zinc chloride has been used for many years, its application consisting first in curetting or cutting away as much as possible of the carcinomatous tissue and then packing the cervical and uterine cavity with gauze wrung fairly dry in 75 per cent. solution of zinc chloride, the vagina being protected with gauze wrung out in a solution of sodium bicarbonate. The Gellhorn or acetone treatment consists in the direct application of acetone to the carcinomatous involvement with the idea that the resulting hardening of the tissue will control hemorrhage and discharge. The treatment should if possible be preceded by a thorough curetting of the ulcerated area. The cavity is then dried and from one-half to one ounce of acetone is poured into it through a Ferguson or some other tubular speculum and left from fifteen to thirty minutes, the excess allowed to run out through the speculum and the cavity packed with a gauze strip soaked in acetone.

The X-ray treatment of carcinoma of the uterus has recently attracted considerable attention and the relief of pain following treatment is worthy of recognization. Unless a reliable radiographer is at hand, however, it had better not be attempted, as careless or unskilled use of the method has produced most disastrous results. The value of radium is as yet too little known to permit a positive statement in regard to its use. It is not a substitute for, but rather a supplement to, the surgical operation. Favorable results are reported in its use especially in the treatment of vaginal recurrences after operation. We must not, however, loose sight of the fact that some cases are apparently stimulated to more rapid growth by its use. I have seen one case of this kind in which there was an enormous recurrence in an exceptionally short time after the radium treatment. Still further, the price of radium salts is prohibitive in the treatment of the majority of patients.

Dr. J. F. Percy of Galesburg, Ill., perfecting the idea of Byrne of Brooklyn, N. Y., has originated a method of applying heat to the uterus and surrounding tissue which in our experience gives better and more lasting results than any of the above methods of treatment of inoperable carcinoma. That heat in a degree low enough to make its use practicable in the treatment of uterine cancer will destroy carcinoma cells has been fairly well proven. Loeb has shown that heating mouse carcinoma in water to 44 deg. Centigrade (111.2° F.) will render the cells inoculable. It has been demonstrated by Clowes that all tumor cells exposed to a temperature of 45 deg. Centigrade (132° F.) in the living body, die. Lambert showed that sarcoma cells are destroyed when exposed to 46 deg. C. (111.8° F.) for twenty minutes. Especially interesting is the observation by Vidal of arrested development of tumors in four patients with temperature above 40 deg. C. (104° F.) Thinking that this might be a mere coincidence, he exposed tumor bearing mice to temperatures above normal and found not only that their tumors showed degenerative changes, but that the mice lived longer than usual. A lympho-sarcoma in a dog also rapidly disappeared after puncture of the heat center, when the temperature rose to 40.8 deg. C. (105.4° F.)

The only agents worthy of consideration for

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practical application of heat in the treatment of cancer of the uterus are hot air, hot water, steam, electro coagulation and actual cautery. Hot air, hot water and steam have been shown by Doyen to be of little value because of their slight penetration: electro coagulation because of difficulty of control of the electrode and the complicated apparatus necessary is impracticable. There remains then the actual cautery, the value of which was recognized by Byrne in an article published in 1892. The use of the actual cautery has recently been revived by Percy and improved in at least two important particulars: (1) the protection of vagina and vulva from heat, (2) the protection of important pelvic structures by the hand of the assistant within the abdomen guiding the operator and permitting of a more thorough and more intelligent cauterization. Dr. Percy kindly demonstrated his technic at the University Hospital in October, 1912 and this has been followed in all our cases.

The idea of the cautery method is to destroy the carcinomatous tissue by the dissemination of a sufficient degree of heat through it to kill the malignant cells and yet not injure very materially normal tissue. To accomplish this Percy until recently advised that the cautery be used at a dull cherry red heat, the gross mass around the cervix being destroyed and the body of the uterus cauterized until a mere shell was left. This degree of heat converts the uterus into a charred mass as carbonization takes place. There can be no doubt but that this destroys the cancer cells in the immediate vicinity of the cautery point and that a moderate degree of dissemination of heat to more distant points occurs. However, it has been found that carbonization inhibits to a marked degree this dissemination and that a cautery iron hot enough to kill cancer cells does not need to be hot enough to char the immediate surrounding tissues. It is advised therefore that the cautery be used just hot enough to cause a distinct simmering and not hot enough to produce smoke or much smell of burning tissues. Cancer cells are destroyed at 50 deg. C.—55.5 deg. C. (131°—140° F.) (Percy.) The principle then of this method is not carbonization but the production and dissemination of heat through the gross mass of primary cancer.

The necessary equipment for carrying out this method of treatment is simple and inexpensive and consists in a water cooled speculum and cautery irons. The speculum is a double walled cylindrical affair permitting of a continuous flow of water beneath its layers. This very efficiently protects the vagina and vulva from the heat. We have improved somewhat upon the speculum devised by Percy by adding a longer phlange to protect the vulva and a handle which makes manipulation easier. The cautery irons are ordinary soldering irons with cone shaped tips graduated in size and can be bought at any hardware store. They are heated over an ordinary gas burner. A somewhat more convenient though not more effective apparatus consists in an electro-cautery controlled by a rheostat. It possesses the advantage that the degree of heat used can be controlled to a nicety and does not necessitate the interruption of reheating the tips.

The technic of the operation is not difficult. In order to control properly the application of the cautery the abdomen is opened by the assistant by an incision just large enough to allow of thorough pelvic palpation. A moderate Trandelenberg position allows the intestines to gravitate out of the pelvis. The operator applies the cautery through the water cooled speculum from below, guided by the hand of the assistant through the abdominal incision. In this manner the operation is continued until the uterus and any involvement at the bases of the broad ligaments are thoroughly cauterized. The guidance of the cautery by the abdominal hand is a very important part of the technic as the amount of heat applied is fairly accurately estimated. The gloved hand will bear a temperature of 120-130 deg. F. but not for any length of time. The operator also has a guide as to the direction of cauterization and is warned if the surrounding tissues become too thin and rupture is imminent. Cauterization of the uterus is carried on as long as possible, the uterine wall being destroyed until but a thin shell is left. The time required for this varies between twenty-five minutes and one hour. A protection is at the same time given to the bladder and rectum that is impossible when the abdomen is not opened. The abdominal hand then permits of a far more thorough and safer application of heat than would otherwise be possible. We recommend the opening of the abdomen in all cases whose condition will permit. In cases with large vegetating masses protruding from the cervix it has been our custom to cut away as much as possible of the growth immediately before cauterization. It has been said that this encourages metastasis but it would seem that this danger is not very real if the excision be followed at once by the cautery.

The most common symptoms in our series

were foul discharge, hemorrhage and pain in the order named. Of thirteen cases with a history of marked loss of weight the loss varied from ten to fifty pounds, the average being twenty-three pounds.

We have used the method above described for the past two years and nine months in the treatment of forty-nine cases which were cauterized sixty-seven times. Of these thirty-seven were cauterized once, ten were cauterized twice, one was cauterized three times, and one was cauterized five times. The abdomen was opened in thirty-one cases and in eighteen the condition of the patient did not permit. In no case was the abdomen opened more than once. In five cases the patient's condition was so precarious that laparotomy was not done at the first cauterization; there was, however, a marked improvement permitting combined laparotomy and cautery a few weeks later.

The indication for treatment in all but one case was involvement too extensive to permit of the modern radical pan-hysterectomy. The one exception was an excessively fat patient, as we consider extreme adiposity a contra-indication to the Wertheim operation. It is interesting to note that this patient was first cauterized two years and eight month ago, returned a year and ten months later for slight bloody discharge, was again cauterized and is at present alive and symptomatically cured.

The post-operative course is usually uneventful: occasionally the temperature rises to 103 deg., there is generally little pain, it being rarely necessary to give more than one one-fourth grain dose of morphine, many cases requiring nothing. The resulting slough is much less than that occurring after the zinc chloride treatment and is practically negligible if the cautery irons are not used too hot. The marked improvement in the patient's condition is noticeable and striking, the haemoglobin increases from 10 to 25 points, there is a gain in weight, the hemorrhage, pain and foul discharge cease and by the time the patient is ready for discharge the cervix and uterus are contracted and covered with fresh scar tissue.

There are, however, two ever present dangers in the use of this method, i. e. the formation of vesico-vaginal and recto-vaginal fistulae. Percy purposely disregards both bladder and rectum and confines his attention only to the cauterization of the involvement present stating that a fistula is the lesser of two evils. In our series vesico-vaginal fistulae have occurred in four cases, two healing spontaneously by contraction of the scar tissue. A recto-vaginal fistula occurred in one case. Whether these complications are due to the actual puncture of the bladder or rectum or to sloughing of carcinomatous tissue before cicatrization takes place, is difficult to say, but I am of the opinion that the latter is the case as the fistulae invariably appeared several days after operation and all patients had extensive involvement of the bladder or rectal walls. Familiarity with the technic both in the case of the operator and assistant will undoubtedly play a part in the avoidance of these unpleasant sequelae as is shown by the fact that our last twenty-three cases have been without complication. Complications aside from the fistulae above mentioned consisted in two moderate post-operative hemorrhages and one death from peritonitis. One death occurred while the patient was still in the hospital due to extreme carcinomatous involvement, the vagina being infiltrated to the introitus. One would think that ureteral injury might occur but as yet we have not seen it.

A few case histories picked promiscously from the series may serve to show better the immediate benefits of the cautery treatment:

Case 4733. Age 56.

History.—Flowing, foul discharge, pain. Loss of thirty pounds in weight.

Examination.—Cervix fixed and the seat of infiltrating mass extending into vaginal wall on all sides. Blood pressure 200.

Laparotomy.—Cautery, 45 minutes.

No discharge, hemorrhage or pain three and one-half months later.

Case 4904. Age 40.

History.—Excessive bleeding, foul discharge.

Examination.—Large friable infiltrating mass filling whole vagina. Very foul discharge.

At first operation abdomen was not opened but mass was cauterized as well as possible from below. Two weeks later laparotomy and cautery was done for 45 minutes. Patient returned in three and one-half months with large recurrence and dangerous hemorrhage. Haemoglobin 23. Cauterization only long enough to control hemorrhage. In three and one-half weeks the cervix was again cauterized to destroy the large recurrent mass. Patient discharged in two weeks with no evidence of new growth. Haemaglobin 54. Two and one-half months later patient feeling much stronger, no bloody discharge.

Case 902 (Private). Age 60.

History.—Flowing.

Examination.—Uterus involved to within one inch of top of fundus with extension into parametrium on both sides.

Laparotomy.—Cautery 40 minutes.

Returns five months later as advised. Very little recurrence. Re-cauterized. Patient alive at present, 2 years and 5 months later.

I have had time in the preparation of this

paper to collect accurate late post-operative data from the physicians of twenty-three patients. Of these eight are living and fifteen are dead. Of the fifteen cases who have died:

1 lived 1 year 7 months.
1 lived 11 months.
1 lived 10 months.
8 lived 4 to 8 months.
4 lived less than 4 months.

Of the eight cases living:

1 living 2 years 8 months after cauterization, "symptomatically cured."
1 living 2 years 5 months after cauterization.
1 living 2 years 3 months after cauterization, "in good condition, vesico vaginal fistula which healed."
1 living 2 years 3 months after cauterization, "farmer's wife, doing all her own work."
1 living 1 year 8 months after cauterization.
1 living 1 year 4 months after cauterization, "vesico vaginal fistula which healed."
1 living 1 year 2 months after cauterization, "slight bloody discharge at times."
1 living 7 months after cauterization, "in good health."

From an analysis of our entire series we feel justified in concluding that from 90 to 92 per cent. of our cases were primarily benefitted, two vesico-vaginal and one recto-vaginal fistulae failing to heal and one patient dying of peritonitis. The improvement in all cases was primarily a cessation or abatement of the most prominent symptoms, viz. foul discharge, hemorrhage and pain, with a corresponding improvement in the general condition of the patient. In the case of the one fatality, in which the abdomen was opened, I feel certain that we were mistaken in surgical judgment, as the case had had rises of temperature before operation as high as 102 deg. It would have been better in this case to have cauterized from below and to have opened the abdomen and recauterized later as the condition improved and the infection cleared up. In the last twenty-three cases of our series primary improvement followed without exception. While considering primary improvement after the eautery treatment it is to be remembered that the limitation and destruction of secondary infection in the carcinomatous mass plays quite as much part in the improvement in pain and foul discharge as the actual destruction of cancerous tissue. It should also be borne in mind that many cases whose condition will not permit laparotomy at the first sitting are so much improved by unguided cautery from below that the abdomen may be opened and a thorough and intelligent cauterization done later. We have found that recauterization may be done several times if necessary with benefit to the patient.

In regard to the end results, we realize that we have no means of estimating how long and how comfortably these patients would have lived without the cautery treatment. However, when we consider that eight of twenty-three patients, all with far advanced carcinoma of the cervix, are living and apparently in good health over periods of from seven months to two years and eight months, and that of fifteen dead, eleven lived from four months to one year and eleven months we eannot but eonclude that life is materially lengthened. In six of eight eases who lived longer than one year after operation the operator was guided by the abdominal hand showing the value of laparotomy where permissible, to allow of more thorough application of the heat. The five years without recurrenee usually given as a cure in post-operative cancer of the uterus has not elapsed in any of our cases so that the number of eured cases cannot bc estimated. It is our opinion that the great majority of cases even though life be prolonged for varying periods will ultimately die of eancer. We do not believe with Percy that metastases in the distant pelvic glands are destroyed as it is our experience that the radiation of heat is not sufficient to reach them. We do think, however, that symptoms are greatly benefitted or cured and that life is prolonged and made eomfortable.

In conclusion do not be mistaken by inferring that we advise the treatment herein outlined in all cases of carcinoma of the uterus as the modern radical pan-hysterectomy as described by Wertheim has a distinct indication in the treatment of operable, which is synonymous with early, carcinoma of the cervix. The cantery method should be used simply as a preliminary procedure to the radieal operation in early cases, or reserved for the late, hopeless and otherwise inoperable conditions as an effieient palliative treatment.

Kresge Building, Detroit.

DISCUSSION.

DR. J. W. VAUGHAN, Detroit: This is too valuable a paper to let go over without discussion. There is no douht the doctor in his method of application of low heat has added very much to our method of making these inoperable cases more comfortable. It is a palliative method, however, and when we come to draw conclusions as to whether a case of carcinoma is benefited, whether life is prolonged from such method of treatment, we get into deep water. We know that a woman will have a carcinoma of the breast, I know of one woman with adeno-carcinoma of the breast who lived for twelve to fifteen years without any rapidity in growth. We all know that in other women we will have an apparently similar type of adeno-carcinoma of the breast and within six months it is all over. Now, we have those same types in carcinoma, particularly of the cervix. The adeno-carcinoma of the fundus, of course, is a less rapid type usually, but when we come to draw conclusions from any large number of cases, as to whether life is prolonged or not, we come in error, because in each different case malignancy or rapidity of growth

is dependent upon the whole bodily resistance of the patient to cancerous growth.

Recently Murphy, of the Rockefeller Institute, has shown in his animal studies and experiments, that in bodies malignant growths are formed by molecular leucocytes. This corroborates work that was done in our laboratory and published in 1910, in which we showed definitely that rapidity of growth, whether recurrence will take place or not, is dependent upon the patient's own resistance, which is furnished from the large amount of phagocytes. I think in that one point we will have to be very guarded as to drawing any conclusions as to whether we have prolonged life by this method. Certainly, any method in these inoperable cases that will reduce the foul discharge that is so disagreeable to the patient, that will relieve pain without the use of opiates, that will control hemorrhage, should be used to the utmost.

DR. WHEELOCK: Just a word in regard to carcinoma. I know that up to within a very few years ago it was thought by most of us that a case of carcinoma of the cervix, in particular, was certainly doomed. Some of us were very much interested last year, in our visit to London, to get the percentages of cures and the lines of treatment that were used in hospitals there. I remember a very profitable and interesting day that we spent with Dr. Herbert Spencer, in which he gave us some valuable statistics. He had a large laboratory room in which he had about 100 specimens under the microscope, and a gross of specimens in jars, of cervices that he had removed from six to twenty-three years previously—all of them, he had taken no recent cases—for our inspection that morning, and these were the figures that he gave with reference to his work. There were about 40 per cent. of cases that came to him, of the cervix, which he did nothing for, because his method was high amputation, and of the other 60 per cent. were recoveries, that made his total statistics 39 per cent. of cures—39 per cent. cures by high amputation of all cases that came to his office. It was rather surprising to us, and he gave the history of two cases that were pregnant at the time, went through delivery, and one of them was present that morning that had been delivered through a carcinomatous cervix twenty-three years previous, in good health, and, of course, had been a cure. This amputation was made after the confinement, so that the high amputation is offering us statistics that compare, it seems to me, very favorably with the Percy method.

In one point Dr. Percy did not agree, either I must have misunderstood him or the reader of this paper, with reference to the extent of carbonization that he recommended, because, as I remember it, he advised very strongly against the use of a degree of heat that produced any amount of real carbonization, he said it was not as effective as the method used and advocated by the reader of this paper, as I understood from this paper there was a little difference of method between the use of it in Ann Arbor, and recommended by Dr. Percy; but I am very certain in his London paper he advocated the low heat, just as advocated by this paper this morning.

DR. DAVIS, Detroit: It seems to me that any method that tends to destroy the quantity of supply of cancerous cell should appeal to us, provided that the process does not stimulate future, more rapid growth. In studying a number of these cases microscopically, the picture is something like this: A very fair line of demarcation is seen of the sloughing tissue, and for some few millimeters beyond this line of demarcation the cancerous cells are seen in a state of collateral disintegration; so also is the stroma. It does seem that to have the cancerous cells in the stroma cut off for a certain distance beyond the line of demarcation of sloughing tissue, there would be no future growth of the cancer. However, in so many of these cases the parts, or some of the deeper cancer cells are not touched, and the question is whether, after the process has ceased, the tissues have contracted, whether there is not a more rapid growth from these deeper cells. It is very common to notice the source of the metatases of these case go on and rapidly increase, possibly from the lower resistance of the patient. I think Dr. Vaughan has made a good point in regard to that, not from the cells that are close to the source of the cauterization, but those that are more distant, they take on increased growth because of the lower resistance of the patient.

DR. JACOBSON, Toledo: Just a word in regard to this subject. Together with many of the other physicians of the country I made a pilgrimage to Galesburg and saw Dr. Percy using his method, and since then have used it somewhat extensively. I want to emphasize first the point brought out by Dr. Vaughan, and that is the relative malignancy of the various forms of cancer. I do not know why there should be so much division on this point of cancerous growths. When we go into the pathology of it we find that cancers are divided into three kinds, and any discussion of cancer must be given with that in view. As to the relative forms of malignancy, we have first the least malignant of all—I think Dr. Vaughan misquoted—and that is the form of cancer that is fungus in its nature; the fungus is the least malignant of all forms of cancer. In that type you can do an ordinary hysterectomy and get 75 per cent. cure. That is a clinical fact, borne out by any one who has done a large amount of work in connection with cancer of the uterus. The other extreme, cancer of the cervical canal, that is the most malignant, and it is that type of cancer with which almost all our methods are failures, I don't care what it is. Between those extremes is the cancer that originates on the vaginal portion of the cervix; those are the cases which are burned, and which every surgeon would cauterize and get results that would last from two, to three or four or five years, or with your high amputation perhaps cure the case.

I had occasion two or three years ago to go through the whole subject of cancer, and I went over Byrne's work very closely, and I want to emphasize the work and his results were not confirmed by miscroscopic investigation, and there was no distinction made between the various forms of cancer. We must bear in mind the relative degree of malignancy of cancers situated in different parts of the uterus. We must get that straight. I think the greatest problem we have to confront is early diagnosis. In this country we have a very small percentage coming under operation.

So much then, for the relative degree of malignancy and the type of operation. I think any surgeon of large experience will tell you that he has cases of cancer of the vaginal part of the cervix that will yield to the old method of cauterization and thoroughly drying. Those are not cancers of the cervical canal.

Now, as to the Percy method of treatment, I think Percy has given us a new form, absolutely new, not mentioned, I think, in the paper, or else I did not hear that, and, by the way, I want to emphasize this fact, that when we speak of the Percy method as the cautery method, you are doing the method an injustice. At the time of our visit at Galesburg we were correcting Percy all the time himself, he got into the habit of calling it the cautery method. It is a heat method of destruction of carcinoma, based on experiments made in Detroit. It is simply thorough heating of these tissues which destroys the carcinoma cells. Percy was the first to open the vaginal method of treatment, and he has demonstrated this all-important fact, which you cannot get in any other type of operation, or form of treatment, and that is this—if the doctor mentioned it in his paper I missed it—that is, that you can take a large percentage of these fixed uteri, that are absolutely fixed in the pelvis, and with the assistant's hand in the abdomen over the fundus, and with the constant application of heat, and it is a very slow method, takes an hour or two hours to do it thoroughly, everything in that pelvis can be made loose, so that it can be moved. That is the one fact that Percy has demonstrated, the most important fact in the whole treatment. That is what I want to emphasize here today, that with this method of treatment we have a new agent whereby we can take these fixed uteri and loosen them up.

DR. J. H. CARSTENS, Detroit: Really, I have nothing to say at all. We might discuss cancer and cancerous growths and other things for hours and hours and get no further than probably we are now. There have been a few points brought out that are worthy of attention. The power of the resistance of a patient to infection of cancer or the growth of cancer is perfectly marvelous in some cases, and we have all seen it.

The object of the paper, as I look at it, is that we should not let these patients alone, but try to help them all the time, and that is what makes me tired when I come across cases where the patient has cancer and they say, "O, well, cancer, you cannot do anything, just let them alone, give them morphine." There are cases where you have to do that and not do anything else, but in cases of cancer of the uterus certainly you can do a great deal, and Dr. Sceley's paper simply was a plea and shows you one method of doing something for these patients, instead of letting them suffer and have the discharge and odor and disagreeableness for the whole family. The paper was simply a plea to try to do something until the patient is buried six feet under the ground, and that is the reason I think the paper is valuable.

DR. SEELEY: I realize that the degree of malignancy in carcinoma of the uterus varies greatly. As Dr. Jacobson has said, adeno carcinoma of the fundus is relatively the least malignant. Our pathologic reports in these cases, according to our pathologist, differ. He can make an estimate of the degree of malignancy. In almost all these cases he has reported very malignant, rapidly growing, carcinoma of the cervix.

We have used this method in no case in which other operative procedures could have been done. Each and every one

of these cases were very far advanced, many of them entering the hospital on a stretcher to have the operation performed.

In regard to Dr. Jacobson's statement about the loosening of the uterus, I mentioned that in my paper, but not exactly in the same words that he used. We cauterize, of course, thoroughly, the tissue on both sides of the growth, and this is followed by a softening and loosening, just as he says, of the uterus and parametrium, and the carcinoma is greatly softened.

As to Dr. Wheelock's statement in regard to high amputation of the cervix, I am very doubtful in regard to this being a cure for cancer. I grant in a very few early cases a high amputation might be sufficient, but in the majority of operable carcinoma of the uterus the only hope you can give the patient for a cure is the radical operation.

In conclusion, I agree exactly with what Dr. Carstens has said. I am offering this method for your consideration simply as a palliative treatment. I have called it the cautery method, because that is what it was originally called by Percy when he demonstrated it to us in Ann Arbor, and I thought it might be confusing to call it something else.

In regard to the degree of heat, when Dr. Percy first originated this method, he advocated that the heat be used a dull, cherry red, in his later work, however, simply hot enough to cause a distinct simmering.

RELATION OF LOCALIZED HEADACHES AND SOME ORGANIC EYE LESIONS TO INTRANASAL ACCESSORY SINUS DISEASES.

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Two years ago I presented to this Section a paper dealing with the subject of ocular disorders as symptoms of systemic disease, in which I called attention to the importance of systemic autointoxications of remote disorders as causative factors in ocular disturbances. In that paper, however, I anticipated largely cases of whatever origin as becoming cases of vascular intoxication, many of which had their origin in gastrointestinal disturbances or disturbances of the kidney, or maybe in the physiology of the ovarian function, etc. At this time I want to refer to a class or classes of cases referably wholly to the domain of the rhinologist. I refer to ocular disturbances due to intranasal disease and disease of the nasal accessory sinuses. I shall not attempt any detailed review of the anatomical relations of the nasal accessory sinus structure to the orbital cavity.

The readiness of infection of the palpebral sac from intranasal disease by way of the lachrymal duct needs no mention, but I shall consider two other classes of cases, first, acute and chronic suppurative conditions of the nasal accessory sinuses. Some disclaim that the close relation of the sinuses to the orbital cavity is the constant or almost constant cause for grave disease of the optic nerve, associated with disease of the accessory sinuses, but rather that final intraocular lesion, especially optic artophy and retrobulbar neuritis, appears in these cases as a general vascular intoxication. I think, the concensus of opinion of those of largest experience is that these two serious conditions, associated with sinusitis and ethmoiditis, are dependent upon pressure of exudate, either by direct exudate pressure or distended sinus walls, or local extension of infection or new growth, and I think it cannot be denied that cases of optic atrophy are certainly dependent upon pressure in extensive posterior ethmoiditis, in spite of the fact of a left optic atrophy accompanying a right ethmoiditis, though one should have constantly in mind the possibility of a remote toxemia.

The important group, however, of ocular symptoms due to accessory sinus disease is made up of those cases of optic neuritis, neuroretinitis and thrombosis without external signs of orbital inflammation, and in these cases the greatest care is necessary for determining the location of the source of infection. De Schweinitz refers to Onodi's investigations, showing the close relation of the posterior ethmoid from the thinness of the intervening walls and assumes that this renders optic nerve involvement easier from this source even than by way of the sphenoid.

On August 27, 1913, M. S., a merchant, aged 50, presented himself on account of dimness of vision which had been steadily progressing for about seven years, during which time the man had had many attempts at betterment by glasses and ocular therapeutics.

His vision at this time =O. S. 2/200, his ophthalmoscopic examination showed temporal half of right disc much atrophied and whole of left. His left field was contracted to a small point disproportionate to his right, in relation to the difference of vision. When the man entered my office I was struck by the marked signs in his phonation of nasal obstruction, and on examining his nose found his right middle meatus literally stuffed with polypoid growth to such a degree that his septum was pushed firmly against his left middle turbinate. At several sittings I removed eleven or twelve polyps of varying size, and did some curetting of his posterior ethmoid mass, but was timid about going farther fearing I might spoil what little vision he had. Following operation I gave the man K. I. and daily pneumo-massage. On October 6, 1913, two months after removal of polyps, his vision =O. D. 20/120 and O. S. 6/200. From that time until he disappeared, about a year and a half following, there was little variation in his vision. During last month I had a note from Jarenky, of New York, saying the man had come to him with vision of right eye reduced to 6/200, also saying that the radiograph was negative, also Wassermann, which latter I had found. I suspect, however, that he had recurrence of polyps with increased pressure on his right, though Jarenky did not mention anything of the man's intranasal or sinus condition. This man, however, is a pipe smoker, and while he disclaimed excess, nicotine poisoning may have had some in-

fluence upon his optic atrophy. I have not had much experience with phlegmanous extension into the orbit, and only report here one case following extreme acute pan-sinusitis suppurative.

This case, referred by Dr. Dayton Parker, Jr., had had a week previously a partial middle turbinectomy; when we operated upon the man he had enormous pan-sinusitis of the right side, with phlegmon of the right orbit and considerable protosis of his right eye. I performed a Killan operation. At the time of operation patient was much prostrated and we feared meningeal involvement. He had no vision of the right eye at the time of operation. After recovery from operation patient's fundus examination revealed embolism of central artery with complete obliteration.

One important fact, leaving little doubt of the relation of the accessory sinus disease and intranasal disease to optic and retrobulbar disturbance, is the brilliant results obtained by sinus and intranasal surgery, and if there is any department of surgery which will not bear temporizing, it is that of the accessory sinuses and the nasal cavity, and it is imperative that one should know his topography well so that he may fearlessly and accurately attack the remotest area involved in the disease he is treating.

In the second class of cases I refer to those coming frequently to the ophthalmologist for the relief of frontal and orbital headache, by the way of refraction correction.

In many of these I find errors of refraction of little or no importance; they are more often young adults from eighteen to thirty; in many of these if one finds refraction error one will find it out of proportion to the symptoms.

Radiography often reveals nothing. One will not find pus in the anterior portion of the hyatus semilunaris to indicate antrum disease, nor in the posterior portion to indicate posterior ethmoid disease, but one will find, on inspection, often a very narrow middle meatus. Sometimes on account of large, turgescent, intensely red middle turbinate, which of itself fills up the middle meatus, obstructing drainage.

Sometimes a high septal deflection is to be found impinging upon the middle turbinate, causing pressure swelling.

Oftentimes these cases have much irritation of the so-called sensitive area, with sneezing, frequent head colds and conjunctivitis of greater or less degree.

Stucky, in a commendable terse paper, presented to the American Academy, 1913, refers to numerous cases of amblyopia due to obstruction of the sphenoid cell and frontal sinus drainage, and reports good results from the simple operation of partial or more complete middle turbinectomy. I believe that many of these cases are but cases of negative pressure with resultant neurastasis obstructing free ventilation and normal drainage, and I think that in many of these, with pressure from high septal deflection, a complete careful resection of the deflection would accomplish relief of pressure and would be preferable in many instances by conserving healthy turbinate surface.

Of one thing I am convinced, that many of this latter class coming to us for correction and oft-repeated correction of refraction, deserve in many instances more careful examination for obstruction of middle and superior meati for the relief of trying frontal and orbital pains.

DISCUSSION.

DR. DON M. CAMPBELL, Detroit: The subject of the influence of intranasal disease on ocular conditions is a pertinent one, and one of great interest. We perhaps have not a very clear idea of the various intranasal conditions that may produce symptoms about the eye. The pressure conditions in the intranasal cavity are very important in this connection. Pressure of the turbinal against the septum will undoubtedly produce asthenopic symptoms that are indistinguishable from the same class of asthenopic symptoms that come from errors of refraction or imbalance of the ocular muscles.

There is one class of cases that is very trying to the ophthalmologist, namely, those patients coming with asthenopic symptoms, with a low grade of astigmatism, perhaps some imbalance of the ocular muscle, with heterophoria, which conditions are carefully corrected. In two or three weeks or a month the patient comes back, and we see again that the ocular imbalance is changed. There is a different type or degree of phoria, which has developed during those few weeks, and a difference in the astigmatism. It is noticeable that in these cases coming from some intranasal pressure the axis of astigmatism will change very materially, sometimes in one direction and sometime in the other, so that it is impossible to fix the point of the axis of the cylinder correctly permanently. I have seen quite a number of such cases that have been permanently relieved by relief of the intranasal pressure.

The next class of cases of which I wish to speak are those that are due to various grades of sepsis in the nose. This is a complex of symptoms, to which Sluder has recently drawn very particular attention in connection with the influence that the sepsis may have upon the various nerve trunks entering the apex of the orbit, and those coming through the anterior foramen, such as the various kinds of neuralgias, pain, disturbance of balance of the ocular muscles, and another curious and interesting symptom, namely, a disturbance in the pupillary condition, sometimes found in connection with these various forms of symptoms in the accessory sinuses of the nose. Then, there is that class of pathology in the nose that goes a little further, where there is an actual septic condition, an accumulation of pus in the accessory sinuses of the nose. This, of course, is likely to produce graver conditions in the organ in contact, maybe an ocular neuritis, followed by an atrophy, choroidal changes, changes in the middle coat of the eyeball, or any other trophic condition that may be found in the ocular tissues.

There is another feature of this subject that is very interesting, and that is that these cases of intranasal sepsis (and this remark also applies to toxemic and septic conditions arising from the whole upper air tract, the tonsils, the nasopharyngeal space, the intranasal cavity and accessory sinuses) may sometimes produce a graver intraocular condition. Such a case occurred recently under my observation. This patient was suffering from toxemia from the tonsils and from a septic condition within the nose. There was a general septicemia, a septic endocarditis developed, and as a result of that an embolism was thrown off into the circulation, which plugged the central retinal artery. That seems to be rather a round-about way, but it does occur sometimes, and shows that the subject of intranasal sepsis has a tremendously wide application, and one which should certainly interest the ophthalmologist to a very great extent.

There are very many other aspects of this subject that are

interesting, but these, I think, will probably give an idea of the principal ones at least.

DR. W. R. PARKER, Detroit: In looking over the literature of this subject, as to eye symptoms secondary to accessory sinus disease, one gets a very false idea. Anatomically, the conditions are ideal for a frequent disturbance, but, practically, on careful analysis, it happens very exceptionally. In my own experience, I have never seen a case of optic atrophy that I have been able to attribute to causes in the accessory sinuses. That it does occasionally occur there can be no doubt, but the coincident retrobulbar neuritis, with polypi, is not enough evidence to make it an etiologic factor, it seems to me. I think too careful examination, in regard to these conditions, of the nose and sinuses cannot be made, and that the rhinologist ought to see all these cases, if the man who is doing the eye work is not competent to make a nose examination, but my personal experience, and the nose examinations are not mine, is that we have been looking for years to try to hook up one of these cases that we could be clear on, but have not been able to do it with any degree of satisfaction. They do occur, as reported by Dr. Livingstone, but I do not think it is clear.

Dr. Campbell's point, I think, is one of the most important. We do know that we see the least eye symptoms in the worst accessory sinus cases. We see eye involvement in the chronic cases, though, of long-standing, and I am inclined to think that it is more of a general toxemia, with a retrobulbar manifestation, than it is due to the proximity of the eye to the accessory sinuses.

There is one other point I would like to mention, and that is with reference to the question of general diseases, especially multiple sclerosis. We are overlooking cases of multiple sclerosis, I think, quite frequently. Cases of transitory blindness; cases even with quite a swelling of the head of the nerve; cases of so-called retrobulbar atrophy are not infrequently produced by the general diseases of multiple sclerosis, and if one has it in mind and is on his guard constantly he will be surprised how frequently he will run across a case of multiple sclerosis that comes first for an eye examination.

DR. R. B. CANFIELD, Ann Arbor: I agree heartily with what Dr. Parker has said. While we have been able to find only a very remote relationship, etiologically, between diseases of the accessory sinuses and diseases of the fundus of the eye, we began the work on this subject expecting to find a large proportion of cases so associated. Supported by the work of Loeb, who has some very beautiful anatomical specimens showing the anatomical relationship between the sinuses and the optic nerve, we felt quite confident that we would be able to make some very interesting observations, but we were disappointed. I was disappointed, because I felt that the rhinologist had an interest in these fundus diseases, and I still think he has, but although the optic nerve itself is in very intimate relationship in some skulls with the posterior ethmoid and sphenoid, we find in those skulls in which an X-ray picture seems to show such an intimate relationship, absolutely nothing in the nose to support any belief that a nose condition may be important in establishing the eye disease. I have just been consulted in a case of that sort, in which a toxic neuro-retinitis was supposed to be possible due to an accessory sinus disease, although observation of the patient for some time had been unable to demonstrate any such thing. This was supposed to be the case, because all of the other possible causes had been eliminated, and yet in this case nothing was found in the nose. In such cases, where other factors have not been discovered, it has been too often the custom to do some surgical interference in the nose, the result of which is that healthy accessory sinuses have been opened, slightly turgescent middle turbinates have been removed, and other operative procedures have been indulged in, with the result that the patient has been more uncomfortable than before, and not securing any relief from his eye condition. I deprecate the removal of the middle turbinate unless a very definite reason can be seen for doing such an operation. I deprecate very strongly the radical interference with the ethmoid unless some disease can be demonstrated in the ethmoid. It is easy to see whether the ethmoid is diseased or not by very conservatively opening one cell and then the other, in such a way as to permit this opening to close if nothing is discovered, that I feel that certainly no cribriform plate should be exposed to air currents and infection. It is a very satisfactory thing to operate radically upon a diseased ethmoid, but I believe that when the normal ethmoid is opened radically the patient is very likely to suffer discomfort for the rest of his life.

Some few years ago the subject of the relationship between the sinuses and the eye was so enthusiastically received that a very great many people were operated upon, and although that wave of enthusiasm has receded somewhat, I still see cases where the middle turbinates have been removed and the ethmoids taken out who are still very uncomfortable, and have much more headache than before, and whose eyes are not improved.

Without meaning to state that I think there is no relationship and that certain cases of fundus disease do not depend on the accessory sinus disease, I think these cases must be rare. I think it would be a good plan always to study very carefully the anatomical conformation of the base of the skull. A Frenchman, whose name has slipped my mind for the moment, has seemed to prove that in certain skulls the bases are of such shape that they do not bring about pressure congestion and predispose to optic nerve congestion and other affections. We should look very carefully into the condition of the sphenoid and the shape of the sella turcica before we go to work radically to destroy useful mucous membrane. In this connection, however, one may operate very nicely upon the septum without doing the patient any harm, and so get rid of any point of contact between the middle turbinate and the septum, possibly break off the middle turbinate, so as to facilitate drainage, although I am not at all sure that there is very much drainage from the accessory sinuses. The very nature of the formation of the mucous membrane leads one to think that there is very little drainage from the accessory sinuses, normally. However, the nasal mucous membrane will drain several pints of fluid during the course of a day. The mucous membrane lining the frontal sinuses, superficial and deep, and the ethmoids is almost a periosteum, and the secretion from it is minimum.

DR. J. E. GLEASON, Detroit: Just one more feature that has not been mentioned in either paper or discussion, that comes up occasionally, namely, the condition of the froutal sinus that causes symptoms on the part of the orbit. There have been two cases under my observation in the last four or five years. The patients presented all of the symptoms of an orbital tumor. In one case these symptoms were so pronounced that, in the absence of any conclusive X-ray findings, or any symptoms in the nose, the surgeon in charge operated and found, instead of a tumor of the orbit, a ruptured mucocele in the frontal sinus. Another case was one of mucocele which broke through the lower plate of the sinus and came out through the upper lid. In both of these cases the X-ray failed to help in any way to show necrosis of the floor of the sinus, and also there was no evidence on the part of the middle meatus. These cases may be somewhat rare, but I have had two.

DR. A. E. BULSON, Jackson: Dr. Canfield has covered the ground very thoroughly in regard to reflexes in the nose. I think we are negligent many times when a patient comes with headache. We immediately examine him for astigmatism, or hyperopia, or something along that line, when, if we would be more thorough in our examination, we would find that the reflexes were practically from nasal origin. I remember very distinctly such a case that came to me some years ago from a distance. This patient complained of intolerable paroxysmal headaches. He was also having considerable nasal obstruction. He had some infectious condition of the nose, with discharge, and had been treated for this condition at various places. He had consulted a good many physicians, one of whom had suggested the possibility of malignancy, causing the man a great deal of worry. I made my investigation and took his vision. He had marked astigmatism, paroxysmal headache, insomnia, and a discharge from the nose. There was a fungoid growth extending up into the sphenoid cavity, and as I enlarged that I extended my probe further and struck a hard substance, which I found to be movable. I thought it was a necrosed bone. I took the forceps, extended well up into the sinus and extracted an incisor tooth. I held it up and said, "That is a great place for an incisor tooth." "There," he said, "that is a tooth that was kicked out twenty-two years ago by a horse." This man had been kicked in the mouth, two teeth were lost, one found, and he thought he had swallowed the other. That, of course, cleared up the diagnosis in this case. I felt, of course, that I had cause to congratulate myself for finding the cause of the trouble. After removing the tooth, disinfection, and other treatment, the astigmatism cleared up.

Dr. Campbell mentioned the change of meridian in astigmatism. I think that is characteristic of nasal disturbance, and I have found to my own chagrin that many times I have corrected a case, and in two or three weeks that patient would come back with the meridian changed. That showed a lack of proper examination, I thought. I call to mind one case especially, where there was an infected septum and enlarged turbinal. After the operation of resection the whole condition seemed to clear up and a normal state followed.

I am well pleased with the discussion that has come out, because I think it is very important. As I have said before, and wish to repeat for sake of emphasis, our investigation

should be thorough and complete in all cases, especially young people, who come for refraction.

DR. E. J. BERNSTEIN, Kalamazoo: I am very glad to note the conservative tone of this discussion. I don't doubt that such things are possible, but it seems to me that when we find a retrobulbar neuritis and sinus trouble, if we will clear up the sinus trouble the retrobulbar trouble will disappear. It would be very hard to convince me that we had not found the cause of the trouble.

With regard to the question of the change of the axis in astigmatism, I think that is a very common experience, and is an experience that comes to me in my later experience that makes me more indulgent in my criticism of others. I think most of us have been prone to criticise the work of other men when we find variation in the axis of the cylinder in astigmatism correction, and think the other man has done wrong. As we grow older, we find that we have made the same blunder, which is not a blunder, but conditions have changed.

Dr. Livingstone made mention of the fact that recession of visual acuity was possibly due to the fact that the man was a smoker. I do think it is about time for us to be a little more exact in making such statements. Some time ago a little discussion was had at the Southwestern Triological Association about the prevalence of tobacco and myopia. I very much startled my friends by saying that I thought cases of myopia caused by tobacco were extremely rare, and that I had never seen a case—or more than one—and I doubted very much if any others had seen many either. I was pooh-poohed and laughed at, but I took great pains after this meeting to write to a great number of men, and almost to a man this position was sustained. I think we ought to be very cautious about making such assertions, and we ought to be fully sure of our ground before we make such statements. Doubtless, tobacco amblyopia does occur sometimes, and, of course, to some tobacco is a poison.

DR. E. A. BULSON, Jackson: I am the man who brought the subject up before the Triological Association. At that time the Doctor said there was no such thing as tobacco amblyopia.

DR. BERNSTEIN: I said it was very rare.

DR. BULSON: I have compiled such cases, both from my own experience and that of others. One case especially comes to my mind now, of a man of thirty-five, who came to me with glasses. I found that further investigation was needed. I asked him if he was a tobacco user. He said yes; that he smoked ten or fifteen strong cigars a day. He was told that it was up to him to save his vision and quit tobacco, or go on smoking and go blind. He said he would rather be blind, but he quit smoking, and in six months' time he had normal vision.

Dr. Bernstein says he has found from correspondence all over this country that the condition is very rare. I want to say that I have a stack of evidence from the best men in this country along the same line, and every one of them says that there is a tobacco amblyopia. In many cases it is caused by a combination of alcohol and tobacco. Tobacco amblyopia is typical and characteristic. The evidence of this is that if the patient discontinues the use of nicotine the condition gets well.

DR. B. R. SHURLY, Detroit (closing the discussion for Dr. Livingstone): My views are absolutely those which have been expressed very clearly and definitely by Dr. Parker and Dr. Canfield. For many years, especially since my return from a meeting of the American Medical Association, where Dr. Loeb went very minutely into the subject of the anatomy of the septum in relation to the orbit, I have been endeavoring to find these cases. It would seem, from the work done by Dr. Loeb, that it must be that we were missing a great many of these cases, and not sufficiently understanding the relationship, but in point of fact they are extremely few, and many of them I have found, just as Dr. Canfield says, where the septum resection will bring about all the relief that is necessary for that individual. I think this is a very highly valuable procedure. In many of these cases there is a deflection in the immediate region of the middle turbinate, and the relief obtained by its correction, without any loss of the turbinate or mucous membrane, to my mind is exceedingly satisfactory, and it seems to me that this procedure, at least as a first attempt to relieve the condition, is a very good one.

VINCENT'S ANGINA.*

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HISTORICAL.

Vincent's angina as a clinical entity was first described by Vincent in 1898. Earlier work leading to this conclusion had been done by himself and others. In literature and practice, cases which were probably due to infection with the bacillus fusiformis and the spirillum were variously named. Such diagnoses included certain cases of noma, gangrenous stomatitis, pseudo-diphtheria, ulcerous angina, cancrum oris and ulceration ascribed to scurvy.

In 1879, Clark (1) described a curved and motile bacillus which may have been the fusiform bacillus.

Rauchfus (2), in 1893, described the specific organisms as occurring in ulcero-membranous angina, in children in a St. Petersburg Hospital. In this same year Babes (3) found the same organism in the gums in cases of scurvy.

Plaut (4) reported five cases of ulcerative angina in 1894 and described the occurrence of the associated specific organisms, the fusiform bacillus and spirillum in ulcero-membranous angina and scurvy and referred to still earlier work by Miller in 1883.

In 1896, Vincent described cases of hospital gangrene associated with the spirillum and fusiform bacillus and stated also that they were found in ulcerous angina. He reported fourteen more cases of angina in 1898. In this study he first established the fact of its being a distinct affection (5).

The next year Bernheim (6) reported thirty cases of angina and stomatitis.

In America, Emil Mayer (7) first called attention to Vincent's work, reviewing it in 1901. The first American case was also described by Mayer in 1902, in the *Journal of American Medical Sciences*. In 1903, Fisher described two cases in the same *Journal* and in July, 1904, Crandall reported a case in the *Journal of the American Medical Association*. Following this, cases were reported by Berkeley (8), Holm (6), Arrowmith (9), Oertel (10), Halsted (11) and others.

INCIDENCE.

There is no doubt that a large number of cases of Vincent's angina go undiagnosed, nevertheless, it is not a common disease.

From 1905-1912 inclusive, 4704 cases of

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diphtheria were admitted to the Grove Hospital (12) and another 809 cases certified to be suffering from diphtheria were found after admission to have other forms of sore throat. Among the latter were forty-one cases of Vincent's angina, so that it occurred in 0.7 per cent. of all cases of sore throat and in 5.05 per cent. of non-diphtheritic angina.

Rolleston (13) also reports that ninety-five cases or 0.5 per cent. of 18187 cases received at the Metropolitan Asylum Board Hospital (London) in three years (1905-7) as suspected diphtheria, were found to be Vincent's Angina.

In the examination by Rice (14) of 1352 routine throat swabs, ten were bacteriologically and clinically Vincent's angina. Twelve other cases showed either the bacillus or spirillum alone. None of these were clinically Vincent's angina.

ETIOLOGY.

Vincent's angina may occur epidemically in children's hospitals. Outside of hospitals it is more frequent in young adults.

It usually appears in children suffering from some form of malnutrition. It follows or complicates some cases of measles, scarlet fever, whooping cough and diphtheria. It may spread through a ward of a children's hospital by contagion. Green (15) mentions such a case due to the use of a common spoon in feeding several children, and another where apparently the dust of nursery house-cleaning carried the infection. In spite of these cases it is probably only feebly contagious.

Hamill (13) reports the case of a physician who was infected by a sick child coughing in his face. Chamberlain (13) reports a case of cutaneous infection due to a bite by an infected person. Hultger (13) reports another due to a patient with the angina biting his own nails.

In adults, as in children, any lowering of general vital resistance is a predisposing factor. Unsanitary environment, faulty personal hygiene and local lesions of the tonsils, gums or buccal mucosa invite the infection. The specific associated organisms are the fusiform bacillus and spirillum.

PATHOLOGY.

Vincent described two types. Rolleston claims however that these two types (the ulceromembranous, the common form and the diphtheroid type which constitutes only 2 per cent. of all cases) are merely two stages. The diphtheroid type is less intense clinically and is characterized by the presence of the fusiform bacillus, without the spirillum and often associated with the staphylococcus or streptococcus.

The infection develops through three pathological stages. The first is that of congestion; the second following from one to several days shows the pseudomembrane formation and the last shows the breaking down of tissue with ulceration and gangrene. Amsden (16) states that the lesion is a greenish yellow slough rather than an exudate. On removal of the necrotic tissue, the denuded surface bleeds easily.

The ulcer usually affects the tonsil. The lesions may be distributed over the mucous membrane of the mouth or throat. The specific organisms have been found in mastoiditis (Yates) (17), ethmoid abscess (Brant) (17), otitis media and meningitis (Held) (17), abscess of the liver and spleen (Schmorl) (17) and cutaneous ulcers (Chamberlain) (13). The fact that the specific infection may attack so many places with such diverse clinical pictures, leads Royer (13) to hope that we may find a more comprehensive and expressive name than that used at present.

Synnott (18) reports a case implanted on the alveolar wound due to the extraction of a third molar tooth. There were also several other small ulcers on the tonsils and on the roof of the mouth. He also reports a fatal case in a child in which pyemia and multiple abscesses followed the angina. He states that the pus from the abscesses contained no micro-organisms.

Green (15) believes that cancrum oris is a neglected or aggravated Vincent's angina. He thinks that if the angina is detected and treated in time noma may always be prevented.

Larson (19) (Univ. of Minn.) was able to demonstrate the spirillum in the blood of a fatal case of noma or Vincent's angina. (Antemortem).

Chambers and Willson (13) state that some cases of pyorrhea alveolaris are regarded as due to the presence of the fusiform bacillus.

DIAGNOSIS.

Differential diagnosis must be made with lues, diphtheria, streptococcal angina and other intense infections resulting in ulceration and pseudomembranous formation. In making the diagnosis, one must resort to the study of fresh smears, cultures and the Wassermann test. Vincent's angina may be associated with diphtheria or syphilis. Certain cases are probably overlooked by failure to examine fresh smears in cases clinically diagnosed as diphtheria.

The fusiform bacillus and spirillum of Vin-

cent's do not grow on ordinary media and do not appear therefore in the culture stains (Cocks 20). Cultures are only made in serum or ascites agar under anaerobic conditions.

It is also probable that many cases of pseudo-diphtheria are Vincent's angina (21) (22).

Wherry (13) states that in the second stage where the ulcer is broken down there is no danger of confounding it with anything but lues. Vincent (13) states that secondary and tertiary syphilis may be secondarily infected with the fusiform bacillus and spirillum.

Guggenheim (23) states that he finds the bacillus fusiformis and spirillum in normal throats. Positive diagnosis he believes depends on the numbers present in the fresh smears.

Wood (24) raises the question of the effect of Vincent's spirillum on the Wasserman reaction. He points out that both the spirillum of lues and the spirillum of sleeping sickness give the positive Wassermann. He had four cases of Vincent's angina in which the Wassermann test was negative.

Meyers (25) raises the question of whether Vincent's angina is an abortive or attenuated type of lues. He does not attempt to answer.

The general symptoms are of no differential diagnostic value, being those of an acute angina. Later the ulceration, with a yellowish slough and a peculiar fetor combined with a lack of corresponding rise in temperature and pulse are suggestive. In some cases the failure of treatment to yield expected results points the way to a corrected diagnosis.

PROGNOSIS.

Children fare less well than adults. The neglected case may show extensive and extending ulceration which makes the outlook less favorable. Given a patient of fair resistance, and with early recognition the angina should clear up within two weeks. Cases of mixed infection are less favorable and much more likely to develop serious complications.

The angina is curable in the early stages but in the advanced stages, rarely (15). Some cases may prolong their course for weeks or even months.

TREATMENT.

The general measures are supportive and eliminative as would be advised in any acute angina. In hospitals isolation should be enforced. In families the usual prophylactic measures should be instituted to prevent the common use of dishes and linen. Fraley (13) and others think that the disease should be made reportable.

Locally a large number of remedies have been reported as satisfactory. Synnott (18) lists among them, 40 per cent. acetic acid solution, undiluted tincture of iron chloride, salvarsan, neo-salvarsan, methylene blue, tincture of iodine, Lugol's solution, Monsell's solution, argyrol, nitrate of silver and hydrogen peroxide. Orthoform tablets relieve the dysphagia. The use of cauterants such as carbolic acid, trichloracetic acid and chromic acid has met with satisfactory results. The actual cautery or excision to remove the necrotic slough have been condemned by most writers.

Richardson (26) mentions in addition to the above, subacetate of copper in conjunction with peroxide of hydrogen, copper sulphate, omorol, zinc sulpho-carbolate, potassium iodide, iron and glycerin and lithium salicylate.

Stark (27) reports three severe cases where the use of sodium perborate as a mouth wash and gargle afforded prompt relief and rapid recovery.

Salvarsan may be used locally in diluted acid or alkaline solutions, the insufflation of the powder, or, as suggested by Rolleston (12) the application of the powder on a swab moistened with glycerine. It may be applied once, twice or three times daily. Its use may justly be described as simple, safe and sure.

Salvarsan may be used intravenously but Citron (12) who has tried both methods finds the direct application much more efficacious.

Amsden (12) reports a cases in which 0.6 gram of neosalvarsan given intravenously relieved the local and general symptoms and was followed by prompt healing of the ulcer.

In conjunction with the stronger local applications, mouth washes may be used of alkaline solutions, 0.5 per cent. formaldehyde, bichloride of mercury, potassium permanganate, normal salt solution, etc.

In associated diphtheria, antitoxin should be used, and in concurrent lues, salvarsan or neosalvarsan given. Weil (13) warns against the use of mercury for lues associated with Vincent's angina before the angina is cured. Mercury tends to increase and prolong the angina. Vincent's angina may also become engrafted upon a stomatitis due to mercury (26).

During the past year we have seen seven cases which I desire to report.

CASE REPORTS.

Case I. T. O. L. Young man 24 years old.

The patient called at my office August 21, 1914. He gave a history of occasional moderate attacks of sore throat which yielded to home treatment. The present sore throat had been bothering him for

over a week. Rather than improving under usual care it was getting more sore. He was not suffering from constitutional symptoms but the dysphagia was marked.

Examination revealed a superficial ulcer covered with a grayish yellow exudate, situated on the right anterior pillar. A clinical diagnosis of Vincent's angina was confirmed by a bacteriological examination.

The ulcer healed promptly with the use of alkaline washes and 8 per ecnt. silver nitrate and diluted tincture of iodine (one part to three parts alcohol). The patient was discharged in ten days.

CASE II. B. G. Young woman 19 years old.

The patient had an operation about November 20, 1914, for the removal of tuberculous glands in the left side of the neck. On December 3, she was referred for an examination of the throat before leaving for home. The mucous membrane was normal. The left half of the tongue and faucial pillars seemed slightly swollen, possibly secondary to the neck operation. On December 14 she returned complaining of a sore mouth. There were no constitutional symptoms, and not very marked dysphagia. Her principal complaint was due to the smarting of hot or seasoned foods.

Examination showed six or seven ulcers on the gums, tongue and hard palate. A clinical diagnosis of Vincent's angina was confirmed by the bacteriological examination.

The ulcers healed rapidly under the use of alkaline washes, local application of 8 per cent. silver nitrate and occasional use of 20 per cent. argyrol. The patient left for her home in eight days with the ulcers not yet completely healed. The continued use of the alkaline washes and argyrol was sufficient to clear them up.

CASE III. H. M. Young woman 24 years old.

Patient began to have sore throat on February 18, 1915. She called at the office on the 22nd. She complained of lassitude, anorexia, chilliness, very sore throat and earache. Her temperature was 101 degrees. A diagnosis was made of acute follicular tonsillitis affecting the left tonsil. Two days later there was an evident ulcer on the left tonsil and Dr. A. W. Nelson confirmed the diagnosis of Vincent's angina by reporting the fusiform bacillus spirillum in the smears.

Two days later a thin pseudo-membrane on the right tonsil seemed to indicate beginning ulceration. This entirely cleared within twenty-four hours.

Under general treatment and local applications of 8 per cent. silver nitrate and diluted tincture of iodine the patient slowly recovered. She was not completely well for six weeks.

CASE IV. E. M. A young woman 21 years old.

This patient had been associated with Case III until quarantine was established. On February 23, 1915, she called at the office with acute follicular tonsillitis. One day later when the diagnosis of Case III was made, it was suspected in this case also. A fresh smear confirmed it.

Under the same care as Case III recovery was prompt, the patient being entirely recovered in ten days.

CASE V. K. N. Young woman 21 years old.

On March 10 it was necessary to move Case III. K. N. was assigned to close the room and prepare for fumigation. Two days later she called at the office with what was apparently acute catarrhal tonsillitis. A smear was made and the bacillus fusiformis and spirillum and staphylococcus found.

Prompt local treatment was instituted. In a week the patient was well without ever developing the clinical picture of Vincent's angina.

CASE VI. L. R. Young man 29 years old.

On April 18, 1915, I was called to see the patient by Dr. J. E. Cooper who gave me the following history:

"I saw R. first on April 16. He stated that about ten days previous he had a sore throat. His case was diagnosed as tonsillitis. After a few days' office treatment he was told that he had a retrotonsillar abscess. This was opened and the patient believed no pus was found. He grew worse and was unable to leave his room. When I was called I found the right tonsil to be enlarged and apparently opened quite widely. This wound showed a suppurating surface. He had a great deal of difficulty in swallowing and his voice was husky. There was no elevation of temperature, and the pulse was normal. He was weak and without appetite. Treatment consisted in swabbing the throat every three hours with 25 per cent. argyrol, together with general measures."

When Dr. Cooper called me on the 18th, I found a greenish yellow ulcer. In addition to the above noted findings there was a marked cervical adenitis on the same side. A clinical diagnosis of Vincent's angina was sustained by the smears. The ulcer was cauterized with pure carbolic acid followed by alcohol. Only one such application was made. The former treatment was continued. A week later he was able to come to my office. The ulcer was nearly clean but still deep and not healed. The adenitis persisted. He came for treatments daily.

On April 30, I noticed a rash on his face and mentioned it. He said that for a week he had been noticing the same thing on his chest and abdomen. I referred him at once to Dr. W. F. Martin who reports as follows:

"Patient admits being exposed to venereal infection on February 3, 1915. Three days later a urethral discharge appeared. About nine weeks later the right tonsil became enlarged and ulcerated. Patient has lost twenty-five pounds. A Wassermann is positive. There is no evidence of chancre externally but one inch from the meatus the urethra shows distinct induration.

The patient was given three doses of salvarsan at one week intervals, of .4, .6 and .6 gms. respectively. Before the third dose his throat was completely well and he had returned to his work."

CASE VII. K. M. Young woman 18 years old.

The patient presented herself at the office April 19, 1915. She states that her throat began to be sore on the 16th. She worked until the evening of the 18th. Her principal complaint was inability to eat because of dysphagia.

Examination showed no local lesion. The mucosa of the pharynx and the tonsils was very red. The right tonsil was pushed forward and the anterior pillar bulged. A clinical diagnosis of retrotonsillar

abscess was made. Incision resulted in only a slight amount of bloody serum. The patient was asked to return the next day.

From past experiences with the family and inasmuch as she lived out of the city, I was not surprised not to hear from her the next day. On the 22nd, however, she was brought in to the office by her sister. At this time there was marked prostration. An examination revealed a deep ulcer on the right tonsil. The incision wound was not involved. On first glance a diagnosis of Vincent's Angina was made but was recalled when the ulcer was swabbed for a specimen. A large pseudo-membrane was removed, which uncovered a bleeding surface. The pseudo-membrane was thick and tough rather than thin and friable. A diagnosis of diphtheria was therefore made. An immediate examination by Dr. A. W. Nelson showed the Klebs Loffler's bacillus, the bacillus fusiformis and spirillum and the staphylococcus.

Her family physician, Dr. J. E. Cooper, gave the patient 6,000 units of diphtheria antitoxin and sent her on the 23rd to the detention hospital. She was discharged in just three weeks.

Dr. Cooper reports that while she was at the hospital her voice became hoarse and that it was difficult for her to talk. After her return home her voice failed until she could only whisper. Two weeks after her discharge her legs began to feel weak and she could not stand well. After being home a month she could not walk. On June 29. Dr. Cooper reported that she was recovering so as to be able to walk across the room. Her voice has also been gradually gaining until she talks nearly normally. I have not been able to examine the patient myself. Dr. Cooper states today (Sept. 2) that she has completely recovered her voice and strength.

OBSERVATIONS.

Cases I and II are of the extra tonsillar type, with prompt response to treatment and rapid recovery.

Cases III, IV and V show the possibilities of contagion and the advantage of early diagnosis and prompt therapeutic action.

In Case VI we probably had a primary luetic lesion with Vincent's angina added.

Weintz (28) reports a case of angina which dragged along for six months. There was severe dysphagia, adenitis of the submaxillary and cervical glands and a marked loss of weight (20 pounds). On swabbing the grayish superficial tonsillar ulcer clean, there was no bleeding. The fusiform bacillus and spirillum were found in the smears. Finally the ulcers healed in a week following local applications of salvarsan. After the ulcers were well, a Wassermann and Noguchi were made and were both positive. He believes the underlying pathology to have been syphilis.

Levy (29) cites a case diagnosed at first as double quinsy. After incising, bloody pus was observed. When seen by Levy a week later, a clinical and bacteriological diagnosis of Vincent's angina was made. No spirochaeta pallida were to be found. Six weeks from the onset, however, luetic skin lesions appeared. The Wassermann was positive. One injection of salvarsan cleared up the local lesion (chancre of the tonsil). He concludes that the patient was suffering from both affections at once.

Salamon (13) reports two cases of Vincent's angina in conjunction with syphilis, the latter appearing after the exudate of the angina had disappeared.

In Case VII we apparently had a concurrent infection with the Klebs Loffler's bacillus and the bacillus fusiformis and spirillum. It is probable that the loss of voice and ability to walk was due to the diphtheria toxins, though Baron (13) reports a case of Vincent's angina, in which there were no Kleb's Loeffler bacilli, which lasted over three weeks and following which faucial paralysis developed with inability to swallow or to speak with distinctness. There was also difficulty in moving the arms and limbs. After electrical treatment and baths the patient recovered completely.

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THE CHOICE OF TIME FOR OPERATING IN ACUTE APPENDICITIS AND GALL BLADDER DISEASE.*

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Abdominal operations have been the most successful field in modern surgery. The abdomen has received more attention on the part of the surgeon at large and there is no longer an abdominal organ that has not been accessible to surgical treatment. Both acute and chronic diseases yield to the skill of the surgeon. Surgical treatment in the former may be a life saving measure and result in a rapid cure; in the latter a rapid and permanent cure may be the outcome, where prolonged medical treatment has been unsuccessful.

Laparotomy is no longer an operation that should carry with it the fear and dread of the past decades, and human lives should not be sacrificed in diseases, where delay and procrastination are a hazard. When the diagnosis has been definitely established, in diseases where danger is imminent, or if there is a strong suspicion of malignancy in some organ, the attending physician assumes an unwarranted risk by not advising his patient to subject himself to surgical treatment. We cannot expect the internist or general practitioner to be accomplished in surgery, but they should be familiar with the indications, for surgical intereference, and, in cases of doubt, insist upon surgical consultation. The surgeon would then no longer be compelled to operate upon cases where diffuse peritonitis has been the result of neglect, with its corresponding high mortality.

After the question of operation has been disposed of, the more important and intricate indications confront the surgeon. It is this point we wish to bring into focus and briefly consider the most opportune time to operate in acute appendicitis and gall-bladder disease.

There are many indications that demand an immediate surgical procedure and many counterindications that demand a postponement of the operation to a later date. It is the difficult task of the surgeon to balance the indications and counterindications and decide upon which side the argument bears more weight. At times it is a difficult task to determine whether a cure cannot be effected without an operation. It must also be taken into consideration, whether the operation does not entail greater danger than the disease itself, particularly, if the morbid grievance is minimal. The counterindication for operation may be evidenced by the diseased organ, or by the general status of the patient; such, as too advanced or too youthful age, synchronous acute or chronic diseases. Aside from these general considerations there are special conditions pertaining to the anatomy or physiology of the diseased organ, that should receive careful study. Many cases of acute infection have succumbed, solely, because the proper time was not selected or was neglected.

APPENDICITIS.

So much has been said about appendicitis in the past years, and the impression is conveyed to many minds, that the last word has been said, and that the subject is antiquated. But, a perusal of the pages of the Year Book of Surgery will be a surprise for the complacent medical optimist to find the hospital statistics on the results of operations for appendicitis marked with a mortality a little above 10 per cent. In the better equipped hospitals the number of cures is 98 per cent., regardless of perforation, gangrene and the severer forms of the malady. There is something radically wrong in this antithesis; there is no reason why all the hospitals should not report 98 per cent. cures. Examining the problem more closely, it becomes evident that delay and the improper choice of time for operation are accountable for the fatal 6 per cent.

Early Operation.—It is now conceded by the entire medical profession, that an early operation is the best, and at times the only chance of a cure. Those, who have an extensive experience in the treatment of cases of acute appen-

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dicitis, will agree, that it is an absolute impossibility to foretell what pathological change will take place in a few hours or days, or what is going to happen to the patient. It is beyond our present knowledge to determine, whether the result of expectant treatment will be favorable or disastrous. When the infection is still within the appendix, the danger to the patient is but very little. We agree with the expression of Dr. J. B. Murphy at the International Congress at Budapest: "When an abdomen is opened and shows pus outside of the appendix, as a result of perforation, its presence is ineonvertible proof that the case has been badly managed up to that time."

Diagnosis and operation should be simultaneous, or, to be more explicit, as little time should elapse between the diagnosis and the operation, as is consistent with the preparation of the patient.

The symptoms of acute appendicitis are generally clearly outlined and uniform, and there is no excuse for the development of an abscess through perforation. Careful study of the case and especially the succession of symptoms as described by Dr. Murphy—pain, nausea and vomiting, local sensitiveness, elevation of temperature and an increase in the number of leucocytes—make the diagnosis easy and an early radical operation with its beneficial results possible.

Preoperative Treatment.—The most frequent cause of death in acute appendicitis is the intoxication from a septic peritonitis. It should be our aim to prevent this complication before as well as after the operation. By placing the patient in Fowler position as soon as the diagnosis is made, bringing him to the hospital in this position and keeping him in this position until he is put on the operating table, much can be done to prevent the absorption, or at least avoiding the infectious material from spreading to the upper abdomen, where the peritoneum possesses greater power of absorption. Peristalsis should not be excited by the ingestion of food and ice applied to minimize the distribution of sepsis.

Elevation of Temperature.—There is always an elevation of temperature in acute appendicitis. When the rise of temperature ceases, it gives evidenee that there is no continued absorption of toxic products. In eases where no elevation has been recorded, it has been overlooked, and if the patient is kept under elose observation, it will always be found some time during the attack. The administration of drugs may interfere with the rise of temperature and obscure the diagnosis. Vaccines, given for appendicitis or some synchronous disease, may keep the temperature down and may also prevent an increase in leucocytes, that would otherwise occur.

In cases where the latter possibility can be excluded, and no rise of temperature can be registered, in spite of close observation, a question mark should be attached to the diagnosis. Then, if the history is carefully taken and all the data are analyzed, some other condition will be found to exist, that has confounded with appendicitis; such as renal calculus and colelithiasis, etc. In these diseases there is no elevation of temperature, unless there is an infection present at the same time; but in acute appendicitis there is always an infection.

Oftentimes we meet with the misunderstanding that presence of pus must cause an elevation of temperature. This is erroneous; there may be a great quantity of pus without a rise of the patient's temperature. The abscess may be walled off, the lymphatics blocked, and the absorption of infective products prohibited. The elevation of temperature is not an indicator of pus, but simply shows that infective material has been absorbed, which is always constant in the beginning of acute appendicitis.

Leucocytosis.—In cases where the temperature is low—99 and 100 deg. F.—the leucocytosis is of great value to determine if actual infection has taken place. A patient upon whom we operated recently had a temperature of 99.5 deg. F. and a leucocytosis of 17500. When all the other symptoms correspond and the temperature is low, an inerease in the number of leucocytes is an important diagnostie aid.

There are cases where the pathologic change in the appendix progresses only to a certain degree, and the products of inflammation are discharged into the cecum; the complete cyele of symptoms is then wanting. The following case will serve to demonstrate: Pupil nurse had a slight pain at McBurneys point at 7.00 p. m., which lasted about ten minutes. The pain then disappeared and no other symptoms prevailed. On the next day patient had a return of the pain at 10.00 a. m., was slightly nauseated and palpation over the appendiceal region elicited tenderness. There was no elevation of temperature; leucocytosis 8500. In spite of absence of fever and leucoytosis negative, the patient was advised to submit to an operation. Patient was first seen at 1.00 p. m. and the operation was performed at 3.00 p. m. on the same day.

The appendix contained a fecal concretion about the size of a small bean and an inflamed area around the concretion. The products of inflammation discharged freely into the caput coli. Recovery was uneventful. No doubt another attack would have followed within a short time with more serious consequences.

Streptococcus Infection.—Streptococci pass through the lymphatics and into the blood stream with great rapidity: the leucocyte count is frequently 75,000-80,000. When there is a staphylococcus infection with pus, the appendix is swollen and sensitive, and with pneumococcus infection, there is also tension.

Chill.—The presence of a chill is always to be construed as a more serious condition. Chill is a frequent symptom of gangrene of the appendix; it may also be a manifestation of a great amount of micro-organisms and their toxins being absorbed.

Arteriosclerosis.—Arteriosclerosis is a severe complication in all severe infections and these patients succumb more readily by metastatic infection or gangrene.

Pneumonia.—Acute appendicitis complicated with pneumonia gives a very poor prognosis. Operations for appendicitis when the patient is striken with pneumonia usually terminate fatally and it is best to treat the patient non-surgically until the pneumonia subsides.

Pregnancy.—Appendicitis during pregnancy is a very grave condition. The percentage of mortality is very high. The more favorable cases are those that are operated upon during the first few hours of the attack. There is a tendency to attribute the symptoms of acute appendicitis to the patient's pregnant condition.

In pregnancy appendicitis causes a constitutional infection very rapidly; pus is absorbed more quickly with the consequent septicemia. After the third or fourth month the uterus pushes the intestines and omentum upwards and away from the cecum. A general peritonitis is thus favored. Appendicitis is frequently the cause of an abortion or a miscarriage. In this instance the micro-organisms in the blood stream infect the area of placental attachment, usually terminating fatally. Whenever appendicitis is complicated with pregnancy, the operation should be performed as quickly as possible. If the patient has recovered from the attack, the operation should be resorted to during the interval period. In every case of appendicitis in the female it is obligatory to inquire as to the possibility of a pregnancy, and, if there is the least doubt, a vaginal examination should be made to have positive assurance. Appendicitis complicated with pregnancy is always a hazard to the patient's life.

The mortality of non-operative cases is 77 per cent., and the mortality of cases operated upon in the first forty-eight hours is 6.7 per cent. This latter percentage of mortality is very high, and, no doubt, the mortality percentage could be greatly reduced, if the operation were performed within twenty-four or better within twelve hours after the onset.

Mortality.—Dr. William Brinsmade (*Annals of Surgery,* No. 1914, page 610) has operated upon 110 consecutive cases of acute appendicitis without a death. The pathological variety was as follows: Sixteen cases of the catarrhal, forty-two of the relapsing, thirty-six of the suppurating and sixteen of the gangrenous type. Nine patients were ten years old or younger. One woman was 68 years old and one man 76. From this report we can deduct, that the mortality in acute appendicitis should be very low, if the proper time for operation is selected. Dr. Brinsmade believes that the results in his cases are chiefly due to the consistent plan illustrated by the following rules:

First, operate as soon as the diagnosis is made.

Second, make a sufficiently large incision. Use the greatest gentleness in handling tissues within the abdomen and stop operating as soon as the absolutely necessary work is done.

Third, use the Fowler position, Murphy drop and hypodermoclysis.

Fourth, use the stomach tube persistently and intelligently.

Later Operations.—The position taken by Dr. Ochsner in regard to the time for operation in acute appendicitis should receive universal endorsement. He teaches that the appendix should be removed in the earliest possible period of the attack. However, if the patient is not seen until the third day or later, it is best to postpone any operative treatment, until the abscess is circumscribed and well localized. There is no longer any danger at that time, if it is treated simply as an abscess. Incision and drainage is all that is necessary to do in this class of cases; but, if the ruptured appendix lies in the incision, it may be tied off and amputated. The cardinal rule should be, incise and drain and get out of the abdomen. While encapsulation is taking place, all foods and liquids are restricted, and the patient is placed in Fowler position. The abscess is not sufficiently walled off until after the fifth day; the danger to the life of the patient is greatest, if an operation is performed on the third or fourth day.

Gangrene of the Appendix.—One of the most deadly and at the same time deceiving forms of acute appendicitis is gangrene. As a rule the patient is seized with a more or less violent attack of appendicitis, frequently accompanied with a chill. It has been our repeated experience to find these patients treated with opiates to relieve the pain. On the following morning the attending physician will make the discovery that the patient's temperature has dropped from 104 to 99 deg. F., pulse about normal and no tenderness at McBurney's point. He congratulates the patient upon his quick recovery and leaves the house doubting his diagnosis of the night previous. But this patient should have had an immediate operation. Within a short time he becomes worse and presents symptoms of intoxication, and a delayed operation may be too late to save patient's life.

In gangrene of the appendix there is no pain after several hours, because the appendix and its nerves are dead; there is no elevation of temperature later, because with the death of the appendix no absorption took place for some time. There was no inflammation or local peritonitis to wall off the infection and consequently the micro-organisms with their products of infection have free access to the lymphatics and are disseminated throughout the peritoneal cavity and the blood stream. The sudden death of the appendix prevents the formation of adhesions; the onset of gangrene is quick, time being too short for the development of adhesions. The entire appendix can become gangrenous in a few hours.

DISEASES OF THE GALL-BLADDER.

The campaign of the medical profession in educating the public toward the necessity of an operation in appendicitis has been successful, as the lowered mortality percentage will show. Today, if the attending physician is reluctant to the surgical treatment in a case of appendicitis, the enlightened patient himself will demand an operation, or at least request surgieal consultation. Give him the same education in gall-bladder disease, and the effort will be crowned with success in a relatively short time by the increase in the percentage of cures. It is not so difficult a task to have a patient submit to an operation, as it may appear on the surface. If the physician or surgeon falters and is not fully convinced himself that an operation is imperative, it is intuitive with even the uneducated patient to pereeive the wavering and undecided frame of mind. The facts must be presented with determination and squarely, and our convictions will meet with response.

Early Operation; Gall Stones.—An early operation in gall stone disease is only counter-indicated by the presence of some condition in the other organs, which would constitute a hazard to the patient's life. Gall-stone operations as a rule, are a successful branch of surgery; this success, however, is dependent upon an early diagnosis and timely surgical interference. Coleliths are in every respect as serious as renal calculi; their complications are more dangerous ,but fortunately the operation is a safer management of treatment. The early operation eliminates the necessity of resecting the gall-bladder and preserves it for future function. The dangers that attend the operations for calculi are usually due to advanced disease, through local or general pathological changes.

In an early stage operation, the disease of the gall-bladder is only catarrhal, with the gall stones confined to the gall-bladder, and not accompanied by danger, providing the patient is otherwise in good condition. Delay means courting advanced pathology and complications; as adhesions, perforation, obstruction of the common duct, chronic pancreatis and malignancy.

Moynihan's scholarly description of the early symptoms of gall stones deserves quotation: "It is of the greatest importance to recognize that the inaugural symptoms due to a gall stone are referred not to the liver or gall-bladder, but to the stomach. The patient complains of fullness, weight, distension, or oppression in the epigastrium, coming on after meals, usually half or three-quarters of an hour, relieved by belching and dismissed almost on the instant by vomiting, elicited with remarkable constancy by certain articles of diet, and dependent rather upon the quality than upon the quantity of food. There is a sense of great tightness which, if unrelieved, may become acute pain; this may be relieved by bending the body forward, flexing the thighs upon the body, or loosening all clothing that may be tight about the waist; while the discomfort lasts he may notice "a catch" in his breath and may not be able to take a deep breath without feeling a stabbing pain at the right costal margin. There may be a feeling of faintness and nausea, and sometimes vomiting may occur. After a rather severe attack of indigestion the body and side may feel stiff for several days. During one of these attaeks there may be a sensation of chilliness; the sensation of "goose-flesh" is often experienced. I am disposed to say with-

out hesitancy that gall stones are never present in the gall-bladder without giving rise to symptoms. The timely removal of gall stones is attended by a death rate of less than 1 per cent."

Mayo Robson claims colelithiasis curable by surgical methods in 90 per cent. of cases.

William Mayo in his simple uncomplicated gall stone cases reports a mortality of less than 0.5 per cent.

Ochsner decries the procrastination of surgical treatment until biliary colic, jaundice and the passing of stones have set in. He gives the following indications for surgical intervention:

"1. Digestive disturbance, a feeling of weight or burning in the vicinity of the stomach after eating; gaseous distension of the abdomen.
2. A dull pain extending to the right from the epigastric region around the right side at a level with the tenth rib, passing to a point near the spine and progressing upward under the right shoulder blade.
3. A point of tenderness upon pressure between the ninth costal cartilage on the right and the umbilicus.
4. A history of having had one or more attacks of appendicitis or typhoid fever.
5. In many cases there is a slight tinge of yellow in the skin, and not sufficient to be perceptible, upon close inspection, especially on the days when the patient is not feeling well, when he complains of feeling bilious.
6. There is usually an increase of liver dullness.
7. There may be a swelling of variable size opposite the end of the ninth rib."

When the diagnosis of gall stones has been made, it is injudicious to postpone surgical treatment. In order to save the patient from grave danger, the gall-bladder should be opened immediately. Delay is equivalent to waiting until the calculus is propelled into the common duct. Operations for stone in the gall-bladder are relatively without danger; but a foreign body in the common duct is a serious operation. There may be no elevation of temperature, but the leucocyte count may be from 15,000 to 25,000, which shows the presence of an infection, of a mild type. Without the leucocyte count it would be impossible to recognize the infection.

Gall-bladders that contain stones are more prone to inflammation than a normal gall-bladder. Gall stones are not necessary, in order that an inflammation may take place. In the majority of cases the infection of the gall-bladder is primary and gall stones secondary; gall stones are the product of inflammation.

Infection.—It is important to note, that in infections of the gall-bladder the temperature varies with the location of the infection or with the location of the calculus. An infection of the gall-bladder rarely produces a rise of temperature above 101 deg. F. With an infection of the cystic duct the temperature may be 103-105 deg. F., and accompanied by chills. An infection in the common duct produces the same high temperature and chills, and jaundice in addition, when there is an obstruction to the flow of bile. This elevation of temperature according to the location of the infection may be accounted for by the fact, that the fundus of the gall-bladder has very few lymphatics; whereas the cystic and the common duct have a rich supply that entails an absorption of a great amount of infectious material.

It is a stricking fact that a gall-bladder hugely distended with pus will be accompanied with a moderate rise of temperature, while on the other hand a small lesion in the cystic duct with but a few drops of pus will cause chills and a rise of temperature to 103, 104, or 105 deg. F. We must be impressed by this fact, not because it is a phenomenon, not only because it is due to greater lymphatic supply around the cystic and common duct, not only because we know that a greater amount of germs and their toxins are being scattered throughout the blood stream, but because it has a distinct and important bearing upon the course to be pursued, when dealing with the malady surgically.

These conditions in the biliary tract must receive the same consideration as in appendiceal disease. We know from the latter that a high temperature indicates the absorption of a large amount of toxic material that passes into the blood stream freely with little resistance or obstruction. Under these circumstances we know it is dangerous to perform an appendectomy, because the abscess is not walled off by protective adhesions to prohibit the microorganisms from invading the blood stream by way of the lymphatics. Then after localization and lymphatic blocking has taken place, we simply incise and drain and get out of the abdomen as quickly as possible without any further surgical interference.

In infections of the gall-bladder the course of infection is exactly the same. It is more dangerous to operate in the upper right quadrant when the lymphatics are not blocked than to use surgical treatment under like conditions in the lower part of the peritoneal cavity, on account of the susceptibility of the peritoneum in the upper abdomen toward infection. The mucosa of all viscera that have a fundus have a

small supply of lymphatics in the fundus; such as the uterus, gall-bladder, stomach and urinary bladder; but their cervix is rich in lymphatics.

An infected gall-bladder, with the patient's temperature above 102 deg. F., should not be operated upon until the fever has dropped below 102 deg. F. If this rule is followed the success in the treatment of gall-bladder disease will take a decided step forward. An exception, however, must be made in greatly distended gall-bladders where rupture is imminent. All that need then be done, is to make an incision large enough to fasten the gall-bladder with a few sutures and drain. It is extremely dangerous to employ any method, instrumental or digital, for the purpose of sounding or removing gall stones. Cases subjected to this kind of treatment usually terminate fatally.

A short time ago it has been our experience to witness a fatal outcome, caused by the apparent eagerness to drain and evacuate the calculi at the same time. A patient was brought into the operating room with a temperature of 104 deg. The gall-bladder was distended with pus. After the pus was discharged, a gall stone scoop served to exenterate about twenty stones. Septicemia set in and the patient died a few days later.

From the brief description of the indications for operating in appendicitis and gall-bladder diseases, it becomes apparent, that in both afflictions the choice of time for operation runs parallel. An early operation is necessary in diseases of the appendix and the gall-bladder to avoid progressive pathology, to lessen the difficulty and seriousness of surgical treatment and to minimize the attending hazard to the patient's life.

In late operations, whether neglected cases or presented too late for early surgery, the greatest care must be exercised to grasp the most opportune time to act, because they are the more serious cases, and the patient's life depends upon the choice of time for operation.

902-904 David Whitney Building.

PROPAGANDA FOR REFORM.

Hypochlorites in Infected Wounds.—Dakin points out that he claims no credit for the "discovery" of the "new antiseptic." He explains that the "new antiseptic" was discovered by Berthollet in 1788. The solution used by Dakin and others is essentially the well-known Labarraque's solution or solution of chlorinated soda. The claims as to the efficiency of the various modifications which are being used in France and England are decidedly contradictory. The one conclusion which all results with the various hypochlorite solutions appear to justify is that hypochlorites, whether applied in an acid solution, in an alkaline solution or in a neutral solution, are of genuine value in the treatment of infected wounds (*Jour. A.M.A.*, Feb. 5, 1916, p. 430).

Oxybon Declared Fraudulent.—On January 15, 1196 a fraud order was issued by the postmaster-general against the Oxybon Company, Chicago. The Oxybon was one of the gas-pipe frauds, which included the Oxydonor, the Oxypathor, and the Oxygenor (*Jour. A.M.A.*, Feb. 12, 1916, p. 526).

The Theurapeutic Value of the Hypophosphites.—At the request of the Council on Pharmacy and Chemistry, Dr. W. M. Marriott, Johns Hopkins University, has examined the evidence for and against the therapeutic value of the hypophosphites. Experiments were carried out to determine the "food" value of hypophosphites. The hypophosphites were introduced into medicine by Churchill in 1858 on a basis of an incorrect theory and utterly insufficient and inconclusive clinical evidence; their use has been continued without justification by any trustworthy evidence for their efficiency. By actual trial on human subjects Marriott shows that at least 85 per cent. of the ingested hyophosphites are excreted unchanged. Further, he holds that there is no proof that the remainining 15 per cent. is available to the organism. It is doubtful if there are any conditions in which the body suffers from lack of phosphorus. Marriott concludes that there is no reliable evidence that hypophosphites exert a physiologic effect; it has not been demonstrated that they influence any pathologic process; they are not "foods." If they are of any use, that use has never been discovered (*Jour. A.M.A.*, Feb. 12, 1916, p. 486).

Tanlac.—Food Commissioner Helme of Michigan reports: "A new panacea for the cure of 'all ailments of the stomach, kidneys and liver, catarrhal affections of the mucous membranes, rheumatism, nervous disorders and the like' is offered to the public under the name of Tanlac. The label on the bottle neatly avoids the pure drugs act by claiming to be only a 'tonic and system purifier.' An analysis of Tanlac in the laboratory of this Department shows the following: Alcohol 16.4 per cent., Glycerin 2.0 per cent., Licorice present, Aloes or Cascara present, Gentian present, Alkaloids (Berberin) trace. The presence of a trace of tartaric acid shows that wine is the base of this medicine. The 16 per cent. alcohol gives it the 'kick' that makes a fellow feel good and ought to fill a long felt want in 'Dry Counties.' Aloes is a laxative. Gentian is a bitter drug, a so-called tonic. If the reader wants to be cured by the Tanlac route at one-fourth the expense, let him get a quart bottle of good sherry wine. Then go to the local druggist and get 1¼ drams of glycerin and 2 drams each of aloes, gentian, licorice and cascara. Mix (if you wish) and you will have Tanlac so near that neither you nor the manufacturer can tell the difference. This formula will give four times the quantity found in an ordinary $1 bottle of Tanlac (*Jour. A.M.A.*, Feb. 26, 1916, p. 676).

TRANSACTIONS

OF THE

Clinical Society of the University of Michigan

Stated Meeting, January 12, 1916

The President, UDO J. WILE, M.D., in the Chair
Reported by REUBEN PETERSON, M.D., Secretary

A HISTORY OF FAMILY CATARACTS THROUGH FOUR GENERATIONS.

WALTER R. PARKER, M.D.
(From the Clinic of Ophthalmology, University Hospital, Ann Arbor, Michigan.)

While it is unusual to be able to establish a hereditary factor as a cause of cataracts, every now and then reports of family cataracts running through several generations point to a true hereditary influence. The late Mr. Nettleship devoted much time to the study of this subject and we are indebted to him for the tabulation of many remarkable family histories.

The most common congenital defect in the formation of the lens is that known as the lamellar or zonular cataract. It is a form of cataract which develops just before or shortly after birth. The opacity occurs in two or more contiguous lamellae of the lens fibers enclosing a clear or partly opaque nuclear portion of the lens substance. The degree of opacification varies from that in which the opaque zone at its equator can be just distinguished to a density through which no red fundus reflex can be seen. (Weeks.)

The age at which cataracts occur in members of a family affected is generally about the same. Nettleship, however, in a large series of cases makes out a good case for "anticipation," the cataracts in many cases tending to appear earlier in each generation. But as Dr. Callan says in Wood's Encyclopedia, "It must be remembered that the beginning of cataracts is more likely to be discovered the nearer one approaches the present time. This is true not merely because methods of observation are more precise and medical men are more prone to make careful examination of eye conditions than formerly, but because the younger patient knows there had been an unusual number of cataractous eyes in his family and is more likely to be on the watch for early signs of oncoming blindness than one whose family eyesight in the past has been good."

The family whose history I wish to present represents four generations including twenty-seven members, thirteen of whom had cataracts. (Fig. I.)

I. The original parent was known to have had cataracts, but no details as to their nature or time of onset are available.

II. The second generation presents a childship of four, three males, Nos. 1, 3 and 4, and one female, No. 2. All had cataracts coming on early in life.

III. In the third generation there was one childship of six members, two males, Nos. 2 and 4, and four females, Nos. 1, 3, 5 and 6. Of the females, Nos. 1 and 3 had cataracts, No. 1 coming on at the age of 12, and No. 3 at the age of 7. Second childship of two members, one male No. 7, and one female No. 8. No. 7 had congenital cataracts. Third childship, two females, Nos. 9 and 10. No. 9 had cataracts coming on in infancy and was operated on December 19, 1904.

IV. In the fourth generation there was one childship of two members, one female No. 1, and one male No. 2. Female had cataracts at the age of 14, with a history of poor vision since birth. Operated July 8, 1912. Second childship of four members, two marriages, one female by the first marriage, No. 3, had cataract at the age of 8, died at the age of 24. Three members by the second marriage, two males, Nos. 4 and 6, and one female No. 5. One male, No. 4, had cataracts since childhood and was operated on October 18, 1915. One female, No. 5, discovered cataract at the age of 17 and was operated on July 14, 1914. Third childship of one male, No. 7, unaffected. Fourth

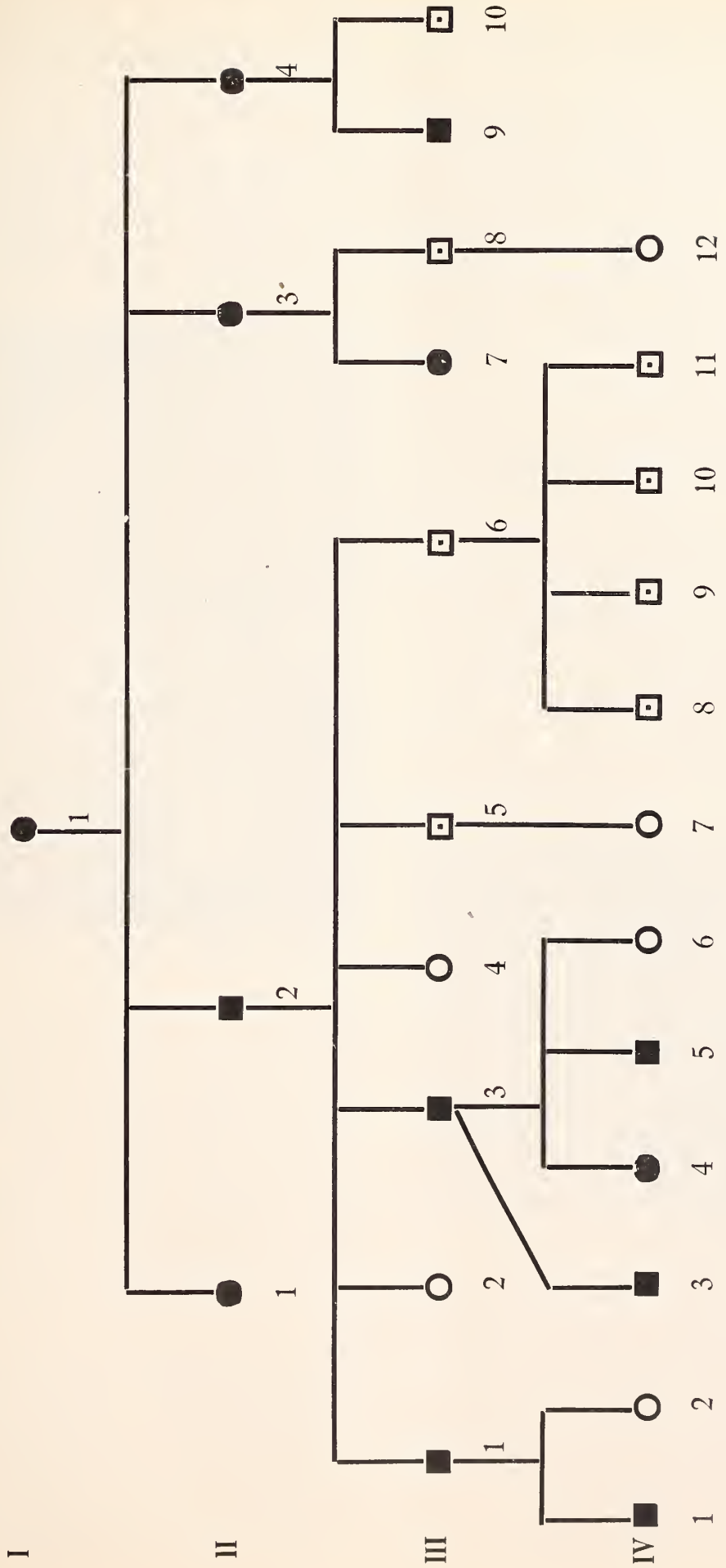


Fig. 1.

childship of four females, Nos. 8, 9, 10 and 11, all unaffected. Fifth childship, one male, No. 12, unaffected.

In regard to the sex most often affected, Nettleship shows that family cataracts more often descend through the female members and that they tend to select one sex to the exclusion of the other. He also observes that when cataract affects more than one generation irrespective of age, development, or variety, it usually descends from parent to child, and does not skip a generation, that is, they are direct and sex limited.

The inheritance in the family here reported was from female to female in five cases, from male to male in five cases, and from female to male in one case, and from male to female in two cases.

As far as could be determined there were no instances of other congenital defects and not a common incident was present apart from the occurrence of cataract, except myopia which was present in all four patients on whom I operated. There was no consanguinity of parentage. Wassermann was negative in three cases. The urine in the four cases examined was normal.

Whether the possibility of familial cataracts depends on an anomalous development of the nutrition of the lens or some systemic peculiarity common to members of the affected childship is not known. The nature of the development of the cataract also is still in doubt. While it is thought by some to be congenital, others think it develops as a rule during the first years of life.

It has been observed that very many patients with lamellar cataract suffer from convulsions during infancy. Rickets, too, has been thought to have an etiologic connection. Indeed it has been reported by Reuhr that 88 per cent. of 153 cases of lamellar cataract showed signs of rickets.

It is claimed the noxious quality of the disease induces the morbid changes in those layers of the lens that are present, or in process of formation at a certain time. This contention is borne out by the fact that lamellar cataract is rarely seen in countries in which rickets is rare. In spite of this apparent relationship however, it has not been proved that this disease is a true cause of this form of cataract. There has also been some evidence to show that tetany is responsible for their development.

No one of the cases in the family here reported came under observation as a child, but no history of rickets or tetany has been established. The history in this respect, however, is not complete.

DISCUSSION.

Dr. George Slocum: The phenomenon of heredity in diseases of the eye is very interesting and is not uncommon. A few years ago two sisters came to this clinic both having aniridia and congenital dislocation of the lenses. The family history was that the mother was born with aniridia and one sister and a brother had partial aniridia. Less extensive hereditary colobomata are frequently encountered. Hereditary retinitis pigmentosa is particularly interesting because of the fact that the unaffected daughters usually transmit the disease to the male children, the females in each generation usually remaining unaffected. Coraliform cataract, a peculiar form of congenital cataract, has been shown to be hereditary and the genealogy of a family of sixty-eight individuals in five generations, twenty-nine of whom had cataracts, was reported by Nettleship. The hereditary nature of several other conditions seems also well established; even some types of refractive error, notably high degrees of astigmatism, have repeatedly shown an undoubted hereditary tendency.

SARCOMA OF THE BREAST.

George D. Sutton, M.D.

(From the Surgical Clinic, University Hospital, Ann Arbor, Michigan.)

This evening I wish to report two cases of sarcoma of the breast. Case 1, Mrs. C. B., age 73, who entered the Surgical Clinic of the University Hospital October 26, 1915 for treatment of a large and painful mass in the left breast. Her family history is negative.

Her personal history shows that she had measles at the age of 5 with good recovery. Her menses started at 13 and were irregular until the age of 16. She was married at 23 and had two miscarriages which were induced during the second month. The menopause occurred at 40, the change gradually taking place and causing practically no trouble. Since then there has been no discharge of any kind.

There is a large goiter which first made its appearance during girlhood and is now smaller than it has been during the past few years. The right lobe is larger and is of cystic consistency. She has experienced exophthalmic symptoms.

Over forty years ago a small hard mass, the size of a hen's egg, appeared in the right lower quadrant of the left breast. It grew slowly but gradually with no pain and practically no inconvenience to the patient. About two and one-half years ago it began to grow more rapidly and at that time was about the size of a lemon. One year ago it was the size of the patient's fist and

from this time on attained its present size. Pain has been experieneed only during the last year, and then at the spreading borders of the growth and was very sharp and lancinating in eharacter.

When she entered the Hospital the tumor mass was supported and earried in a sae whieh was improvised from underclothing. During the last forty years no one was permitted to see the growth until two weeks before she entered this Hospital. The pain gradually be-



Case 1. Sarcoma of the Breast.

came very severe and two large purplish spots appeared whieh seemed about to ulcerate. Being unable to piek her plums as usual, and having to hire a boy for this purpose she finally sought the services of a local physieian who advised immediate surgical treatment, the patient up to this time having had no idea of an operation.

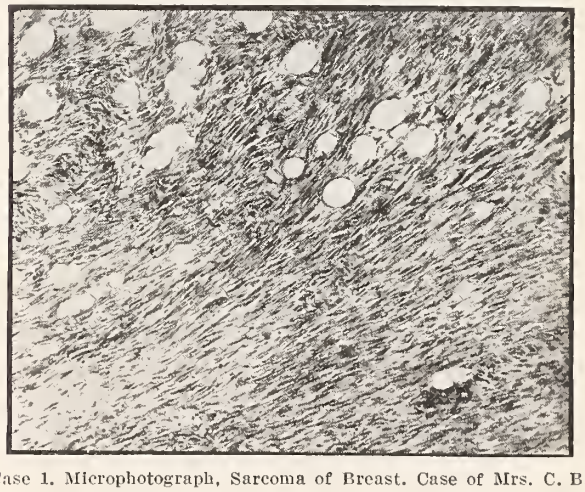
Examination showed a large tumor of the left breast which was nearly one and a half times the size of the patient's head. It was movable and not elosely adherent to the deeper structures of the chest wall. Its base was five inehes in diameter, greatest diameter fourteen inehes and height eight inehes. It was lobulated and at the border were softer tender nodules whieh were of more recent development and caused the greatest pain. In the region of the nipple there was a mass the size of a hen's egg.

The skin over this tumor was smooth, tense, and shining, and contained large, dilated, radiating veins, and a vast network of smaller vessels. Very slight injury had caused profuse hemorrhage. There was no evidence of clavicular or axillary glandular involvement. In a reclining posture the tumor mass rested on the left arm, but when sitting erect it extended directly forward, thus allowing comparatively free use of the arm.

She was not emaciated but was partially deaf and afflicted with palsy. Blood; Hgl. 90, R. B. C. 3,540,000 W. B. G. 9,500. Serologic test, Wassermann negative. Urine negative with the exception of a few hyaline casts. Otologic examination showed senile auditory nerve atrophy. Dental surgical examination showed pyorrhea.

The patient was operated upon by Dr. Darling, October 30, 1915. A very light ether anesthesia was administered because of myocarditis and very irregular pulse which tended toward the perpetually irregular type. The lung examination was negative. An incision was made sufficiently high at the upper and lower border of the tumor to insure the meeting of the flaps. On removal of the mass from the muscle from above downward no evidence of infiltration was observed. By inserting hemostats into the tissue which was put on a stretch and just ahead of the knife, the hemorrhage was easily controlled.

Immediately after the removal of the tumor,



Case 1. Microphotograph, Sarcoma of Breast. Case of Mrs. C. B.

which weighed ten pounds, pressure and hot packs were applied to the precordium, then gradually removed in an attempt to prevent a sudden embarrassment of the heart aetion. The wound was closed with silkwormgut sutures.

Since the patient was a bad risk speed was indicated. The pulse before anesthesia was 86 and after 88 and of fair quality. The skin, however, became very cold and was slightly covered with cold perspiration but quickly cleared up. The time taken to remove the tumor was

fourteen minutes, the time necessary to complete the operation was twenty-four minutes and the duration of anesthesia, twenty minutes.

The gross pathology of this mass showed an encapsulated elipsoidal tumor which was firm, lobulated and possessed areas of cystic degeneration. The cut surface was grayish white and the numerous lobules were made up of whorls of connective tissue cells giving it a wild appearance. Microscopic examination showed many large spindle cells and no evidence of glandular elements. There was a lack of system in the arrangement of the cells which gave an indication of their wild and rampant growth.

She experienced an uneventful recovery and was discharged on the fourteenth day, cured from her surgical condition.

Case 2, Mrs. D. C., who entered the Surgical Clinic, January 24, 1912 because of a tumor of the right breast. Her family and personal history was negative. She was operated upon by Dr. Darling, January 25, 1912 who performed a radical operation of the breast and axilla.

The pathologic report on this tumor showed a cystic adenofibroma of the breast with sarcomatous stroma. There were small metastasis in the lymph glands of the axilla.

On the twelfth day she was considered cured from her surgical condition and discharged.

A graphic description of breast sarcoma has been given by Creighton, as follows:

"A tumor of the breast will be diagnosticated sarcoma if it bulges out as a globular or ovoid or spherical mass carrying the nipple erect upon its summit or at one side; distending the skin which is often red or livid, glazed, thin and ready to burst, having a definite rounded contour wherever it can be felt, nodulated or lobed, feeling tense or elastic, of rapid growth; or, if it has burst through the skin, making a bleeding fungus with overhanging edges or a fleshy lobulated knob or button covered with a fleshy pellicle. On section it will be found uniformly grayish or fleshy, separated into rounded or oval lobes or into convolutions, with a lobulated or scalloped margin, encapsulated, vascular, interspersed with areas of extravasated blood or of blood pigment, or with opaque yellowish or sand colored tracts, or with friable necrotic centers; if there be much mamma left, it will be borne upon the surface of the tumor at one or more sides as a distinct stratum." (Cancers and Other Tumors of the Breast, Williams and Norgate, London, 1902). (Treatise on Tumors, Hertzler, 1912).

Much of the literature on breast sarcoma comprises only isolated case reports and one is impressed with the relative rarity of this disease.

Dr. Armstrong reported a case of sarcoma of the breast in the *Montreal Medical Journal*, April, 1903. "A woman, aged 35, entered the hospital complaining of the size and weight of the left breast, and also of free hemorrhages from it on several occasions. The growth had begun as a hard and painful lump, the size of a walnut, just to the inner side of the left nipple. It increased to the size of the fist by the end of the first year. From then on it grew rapidly and became softer and three months before admission, hemorrhage occurred to the extent of two quarts according to the patient's statement. Following this there were frequent hemorrhages." Dr. Armstrong removed it very freely, together with a few glands from the axilla showing inflammatory enlargement.

The tumor was benign for the most part and weighed about four pounds. It was of fibrocystic nature and supposed to be innocent up to the time of rapid enlargement. However, sarcomatous cells could be found in distinct masses in very many places and are supposed to have been the cause of rapidity of growth.

At the same meeting Dr. Keenan reported a case where there was a clear history of fibroadenoma having been present for ten years and then rapid enlargement following a slight injury. The growth proved to be fibroadenoma with sarcoma cells invading it.

The following case of sarcoma of the breast was reported at the meeting of the Clinical Society of the University of Michigan, January 2, 1907 by Dr. Frank A. McJunken.

Miss P., age 47, was admitted to the Surgical Clinic, November 23, 1906 for treatment of tumor of the breast. Six years previously she noticed that the right breast was hard in consistency and somewhat larger than the left. It grew gradually but slowly up to July, 1906, but during the remaining four months it grew much more rapidly. Examination showed a growth the size of the patient's two fists and fairly movable and apparently encapsulated. A part of the mass was cystic while the remainder was of a solid consistency.

Microscopic examination showed the presence of sarcomatous cells.

Dr. S. H. Geist and Dr. A. O. Wilensky report, in the *Annals of Surgery*, July, 1915, five hundred and fifty-eight cases of breast tumor including chronic inflammatory growths both simple and specific from the Mount Sinai Hospital, New York, during the last ten years.

"Of these, twenty-two or 3.9 per cent. were sarcomata; two hundred and sixty, or 46.5 per cent. were carcinomata. The twenty-two sarcomata were grouped as follows: fibromyxosarcoma, five; spindle cell sarcoma, five; round cell sarcoma, four; cystosarcoma phylloides, four; giant cell sarcoma, two; and perithelioma, two. The fibromyxosarcoma and spindle cell sarcoma are the most common types. The tumors occurred in women between the ages of forty-nine and twenty-nine, thirty-nine being the average. In 57 per cent. the right breast was involved, in 33 per cent. there were bilateral tumors, and in 10 per cent. there was involvement of the left breast. The duration of the tumors varied from one week to nine years and there was a variation in size from that of a walnut to that of an adult's head. In one-third of the cases the skin was fixed to the tumor."

The frequency of sarcoma of the breast is considered by Rodman (*Journal American Medical Association,* 1911) at 2.7 per cent. In six hundred and ninety-four tumors of the mammary gland, Bloodgood (Kelly and Noble, Gynecology and Abdominal Surgery, 1908) found fourteen cases of sarcoma or 2.01 per cent. Out of three hundred and fifty-five cases of mammary tumors Poulson (*Archiv. f. Klin. Chir.,* 1891) reports thirty-three cases of sarcomata or 9.2 per cent. (Reference "Treatise on Tumors" Hertzler, 1912).

Sir Roger Williams (Diseases of the Breast, 1894) analyzed 13,824 primary neoplasms of the breast (males, 4,593; females, 9,227); 1,081 were sarcomata (males 559; females 552) and only ninety-nine were sarcomata of the breast (males 5; females 94). He found 9.4 per cent. of the body neoplasms to be sarcomatous, and only 3.9 per cent. of tumors of female breast to be sarcomata. As compared to cancer of the breast it is rare. He analyzed 2,397 consecutive neoplasms of the female breast and 1,863 or 77.7 per cent. were cancers, while only ninety-four or 3.9 per cent. were sarcomata, thus showing the greater stability of the connective tissue elements of the gland. He also found that 54.5 per cent. of all neoplasms were cancers and of these 77.7 per cent. were cancer of the mammae; 9.4 per cent. of all neoplasms were sarcomata and of these 3.9 per cent. were breast sarcomata. This shows the relative frequency of cancer in the female breast and that it is high above the average while the frequency of sarcoma is far below the average.

"Sarcoma of the breast may have its origin in the intralobular hyaline connective tissue, or in the denser interstitial fibrous stroma surrounding the gland or it may be a metastasis from a distant primary growth, e. g., the ovary or tonsil. Instances of all the various cellular varieties have been reported but with the exception of the spindle cell type they are of extreme rarity. The most common variety is that which develops from the intracanalicular myxoma which in their later stages tend toward malignancy." (Keen, System of Surgery, Vol. III, 1908).

It is thought by Johnson to be a dangerous delusion and unsurgical procedure to amputate the breast without clearing out the axilla. Also, that sarcoma invades the lymph vascular system very nearly as quickly as carcinoma and that no reliance can be placed on the supposed absence of the glandular involvement. (Johnson, Operative Surgery, 1915).

"The complete removal of the breast and the greater pectoral muscle should be practiced in every case. In the case of small sarcoma the excision of the tumor with a good margin of healthy breast tissue may suffice but where any doubt exists the complete operation should be employed. One should never temporize or compromise with malignant growths." (Keen, System of Surgery, Vol. III, 1908).

The first case (Mrs. C. B.) reported in this paper illustrates the fact that all tumors of the breast are potentially malignant, and that not only do malignancies arise from glandular elements but very malignant growths may arise entirely from connective tissue elements. The second case (Mrs. D. G.) teaches us that sarcoma is not only conveyed through the blood stream but also by way of the lymph vascular system.

DISCUSSION.

Dr. Walter A. Hoyt: I have taken the pains to look up the number of cases of malignant disease of the breast which have occurred in the University Hospital during the past five years to establish the frequency of sarcoma in the relative small number of cases. In the last five years we have records of 135 cases of malignant disease of the breast. Of this number only two were definite sarcomata of the breast. Practically all of these growths were examined microscopically and were carefully studied. This would give a percentage of not over 1½ per cent. These figures would lead to the conclusion that in this clinic, at least, sarcomata are not as frequent as reported elsewhere. (3.9 per cent.)

The interesting point in Case 1, is the long duration of the tumor up to the time that there was any noticeable change, and also the length of time that this patient concealed the presence of the tumor in the breast. It took a good deal of tact even after she entered the Hospital to persuade

her to submit to an examination. She was very sensitive and at the last moment was even going to give up and not let us examine her after she had come a couple of hundred miles to the Hospital for operation.

The question of axillary involvement is also interesting. The older and many of the newer text books say that there is no axillary involvement in sarcoma of the breast. However, a good many cases of such involvement have been reported. In Case 1 it was impossible to palpate any axillary glands which is also true of a large number of carcinomata of the breast. In such cases, however, when the axilla is opened up large glands are found under the pectoral muscle. A radical operation was not performed on the first patient for the simple reason that we were positive the patient would not be able to stand it. The mass was removed as a palliative procedure, of course with the hope that a cure would result. Had this tumor remained the patient would have had severe hemorrhages, similar to the one she had, and eventually the bleeding would have caused her death.

DR. REUBEN PETERSON: I would like to ask Dr. Sutton in closing the discussion if he will give us statistics with regard to the recurrence of this kind of tumor of the breast.

DR. UDO J. WILE: I should like to ask a question bearing on the pathology of this tumor. It struck me as I examined it that it was not very cellular. It is almost inconceivable, as far as my pathologic knowledge goes, for a round cell, or for a giant cell sarcoma to have existed as long a time as this without having long before that caused the patient's death. I would like to know if this was not distinctly a fibrosarcoma and very acellular.

DR. SUTTON: The pathologist reported that it was a spindle celled sarcoma.

DR. WILE: I think that is a very striking feature.

DR. SUTTON: Statistics show that about 75 per cent. of the patients operated upon are cured by the operation. There are recurrences, however, and by succeeding operations, cures are often obtained.

REPORT OF A CASE OF MULTIPLE CARCINOMA WITH INVOLVEMENT OF THE BRAIN.

ALBERT M. BARRETT, M.D.

(From the Clinic of Psychiatry, University Hospital, Ann Arbor, Michigan.)

The report and demonstration which I wish to make concerns a case which was at the Psychopathic Hospital a few weeks ago.

The patient was a woman who had always been comparatively well until she was 33 years of age. The only previous disturbances had been occasional attacks of biliousness since her youth, and an injury to her left eye which left a permanent cicatricial contraction of the pupil. In 1914 she had an epithelioma removed from the left forearm.

About July 1, 1915, she complained of headaches and showed an unusual amount of worry over her household work. She had frequent attacks of severe vomiting. From this time on her health deteriorated. The headaches continued and there were several attacks of vomiting each week. She appreciated that she was not mentally normal. She became unable to do the intellectual work that she had formerly done, and as she expressed it. "All sorts of fancies and fairy tales are passing through my head." Her vision became impaired and she became unable to do more than simple tasks.

On October 30 the wagon in which she was riding was struck by an automobile. She had no direct injury but was unusually nervous after the experience. In a few days there was a partial motor and sensory paralysis on the right side. The weakness was more marked in the leg than in the arm. At times she was unable to express herself because of a speech disturbance. These conditions brought about her admission to the Psychopathic Hospital on December 6, 1915.

A satisfactory physical examination was much interfered with owing to the deep stupor of the patient and consequent lack of any coöperation.

The laboratory examinations showed nothing pathologic in the urine. There was a leucocytosis of 11,450-13,500. The cerebrospinal fluid showed greatly increased pressure. The albumin was slightly increased, measuring about twice the normal amount. The Nonne-Apelt and Noguchi tests for globulin were weakly positive. The cells numbered eight per cubic millimeter. Lange's colloidal gold test was negative. The Wassermann reaction on the fluid and on the blood was negative.

At the time of her admission on December 7, 1915, she staggered as she attempted to walk and would fall if unsupported. Both eyeballs were prominent and vision was much diminished.

Mentally she understood questions when these were put forcibly but her replies soon rambled into disjointed and irrelevant remarks. Spontaneously she kept up a continuous talk, made up largely of fabulations of her personal and domestic experiences. In her speech there were often paraphasic disturbances and some perseveration. Objects placed in her hands were often miscalled; her reply was usually a paraphasic distortion of the proper name or some related idea.

Eye movements to the outside of the mid line were impossible. The reactions of the left pupil were interfered with by a large scar. The right pupil was dilated and its outline was

irregular. It gave no response to direct light stimulation.

The tongue, when extended, deviated to the right. The right knee jerk was more prompt than the left and there was a Babinski reflex of the right foot.

On December 9, an examination of the fundus by the Department of Ophthalmology showed in the right eye a choked disc of four diopters with hemorrhage into the retina.

There was little change in her condition from day to day. There were some days when she talked spontaneously, but usually she lay in a deep stupor.

On December 19 she had an attack in which the head was turned to the right and there was spontaneous horizontal nystagmus. The body was relaxed and there were no twitchings. About two hours later there was another somewhat lighter attack.

Generally she had no control over her bladder or bowels.

On December 17 the Department of Roentgenology reported that X-ray negatives showed "an erosive and irritating process in the left temperosphenoidal lobe, with additional erosion of the petrous portion of the temporal bone."

On December 30 she was semi-stuporous, and, seemingly from pain, she resented being disturbed. The right lid was moved more weakly than the left. At rest the right angle of the mouth was lower than the left. Both eyes moved inward but there was complete paralysis of both external recti muscles. There was no spontaneous nystagmus, but when the left eye was turned inward there were a few lateral jerks, the swifter component being towards the inner side. Both corneal reflexes were present. There were no sensory disturbances of the face. Movements of the arms were well done, excepting that the left arm was used more freely than the right. The tendon reflexes remained the same as in the former examination.

To tests with pain and touch stimuli she reacted quite well. She correctly named objects which were placed in her left hand, but the same objects when placed in her right hand were either not identified or were given the name of some objeet recently held in the other hand.

It had become apparent from the history and examinations that the disturbances in this patient were due to an intracranial tumor. The question of localization presented difficulties. The symptoms of right sided paresis, the paraphasic and right sided agnostic disturbances, placed the tumor in the left hemisphere. The left sided auditory nerve deafness and a weakness of the left facial nerve from a peripheral involvement suggested a disturbance in the region adjacent to the exit of these nerves at the base. The paraphasic disturbances and the information derived from the X-ray examination showed involvement of the left temporal lobe.

The bilateral involvement of the sixth nerve was difficult to explain by a tumor located only on one side. It seemed probable that this might be due to disturbances consequent upon the high degree of intracranial pressure which was present. If not, it might be that there were multiple tumors, some of which lay in the course of these nerves.

There was from the first an unusual degree of psychic disturbance in this patient. Not only was she stuporous but there were symptoms of disturbed thought and an apprehensive delirium. The rather definite localization of this tumor outside of the frontal region, involvement of which is usually found when psychic anomalies are present, suggested that these mental symptoms were dependent upon the general cerebral disturbances from the intracranial pressure.

The absence of a disturbance of the fifth nerve and the impossibility of determining any certain cerebellar involvement seemed to be sufficient for excluding a tumor of the cerebello pontine angle. At no time was there sufficient clearness as to localization to warrant surgical treatment.

The patient continued to fail and died December 31.

At the autopsy there were found a few small nodular protrusions of the skin of the chest, small tumors about the size of a small bean in the heart muscle and numerous small nodules scattered throughout both lungs. There were many small nodules scattered over the surfaces of the diaphragm. The mediastinal glands were enlarged. The mesentery and parietal peritoneum showed many small nodules. The head of the pancreas was involved in a large mass, the size of an orange. The liver contained several large nodules. The left tube and ovary were much thiekened.

The examination of the brain showed the changes produced by intraeranial pressure. The dura was tensely stretched. The pia was dry and velvety. The convolutions of the convexity of the brain were much flattened. The brain substance was flabby and wet. The left temporal region was extremely softened and about

2 centimeters back of the tip, a cyst with fluid contents extended to the surface.

In the superficial examination of the brain, there were observed several small nodules near the surface of the left frontal lobe, and a larger nodule in the right occipital lobe.

The brain weighed 1375 grams.

After fixation in 10 per cent. formaline, the brain was cut into longitudinal sections. In every plane the brain showed sharply circumscribed focal lesions, differing in size and appearances. The number of metastases is difficult to estimate. In one plane there were seven. One might safely state that there were at least fifty tumors scattered through the brain substance. The smallest measured a few millimeters in diameter. The largest was fully 5 centimeters across. This one occupied the tip of the left temporal lobe and had broken down into a cyst filled with a fluid content. In color, these which were not degenerated were a little darker than the gray of the cortex. Their outline were roundish or oval. They were most frequently found just beneath the gray border of the cortex.

Two other large tumors lay, one in the central white substance, between the posterior end of the left island and the ventriele, the other in the cortex and underlying white of the left second temporal convolution. Both of these larger lesions were much broken down and had numerous cavities.

The histologic study of the tumors present in both the body and brain showed them to be a richly cellular type of carcinoma. Sections from tumors of the brain presented some differences in appearances, depending upon the extent of degeneration which the tumor had undergone. In all tumor collections the characteristic cells were of an epithelial type. These were arranged in masses or strands with very little separating stroma.

In some places the pia adjacent to the tumor was densely packed with cells like those of the tumor itself. The margins of the tumor were always sharply separated from the brain substance. There was no marked reaction of the glia around the tumor, and there was no well differentiated capsule. In the vicinity of the tumor were grouped dense collections of cells, seemingly entirely cut off from the larger mass.

Around some of the blood vessels, at a considerable distance from the tumor, were a few cells of the type of those of the tumor.

As far as the central nervous system was concerned, the process was one of multiple carcinomatous tumors, which from the other findings in the case were metastatic from tumors in the body organs.

The case and its findings are interesting in the lack of physical disturbances, which suggested such extensive carcinomatous changes as occurred in the body organs. As far as the brain condition is concerned, carcinoma is not a common type of tumor. Among some fifty-five brain tumors in our laboratory collection there are but four instances of carcinoma. In two of these the tumors were metastatic. The others were tumors growing from the epithelial structures of the choroid plexuses. Of some interest is the bilateral paralysis of the sixth nerves without any focal lesion in their course. The peculiar and prominent psychic disturbances may have their explanation in the effects produced by such widespread distribution of the tumors and the presence of several tumors in the frontal lobes.

DISCUSSION.

Dr. Carl D. Camp: Dr. Barrett said metastatic tumor of the brain is not common, and yet metastases to the nervous system, taken as a whole, must be considered sufficiently frequent to be of considerable practical importance. It so happens that in the year 1915 I saw five cases of metastases of carcinoma to the spine. One of these cases was operated outside of the Hospital. This was a case in which the metastases came from the mammary gland which had been removed five years before for carcinoma. Another of these cases was one reported by Dr. Sherrick from my clinic in the Hospital, in which the primary focus, according to Dr. Warthin, was probably in the head of the pancreas, an interesting thing in connection with Dr. Barrett's case where the primary focus was also probably in the head of the pancreas. In two other cases, in one metastasis was from the thyroid and the other from the prostate. In another case the original focus was not discovered. In this last case the patient died some time after attempted operative removal, but autopsy was not made. In all of these cases the diagnosis was confirmed either by operation or autopsy, or both.

These are not favorable cases for operation. In the case of the spinal metastases, one generally finds that the metastasis has been into the vertebrae. In the case reported by Dr. Sherrick the entire length of the spine was infiltrated with carcinoma. And even the base of the skull showed a carcinomatous infiltration.

In the case of brain and spinal metastases one finds, I think, two distinct types. The one is the multiple, discrete tumor such as is shown here by Dr. Barrett, and the other is the carcinomatous metastasis in the meninges, in which the carcinoma spreads throughout the meninges setting up a veritable carcinomatous meningitis. Of course, in either case the condition is entirely inoperable.

Dr. R. Bishop Canfield: I was interested to see this case of Dr. Barrett's because of the fact that lesions of the temporal lobe have been so difficult to diagnosticate, but have been rendered somewhat

more easy by the work of Pike and Wilson who have determined a very definite reaction to the vestibular tests in cases with lesions in the temporal lobe. They have detailed very definite reactions of the vestibular apparatus to heat and cold in such lesions. Their work has been entirely experimental and has been done chiefly on dogs. They have shown that lesions low down in the temporal lobe interfere with the normal vestibular reaction although the vestibular apparatus itself may be perfectly normal. For instance, a lesion in the lower part of the left temporal lobe is demonstrated when the ear of the corresponding side is irrigated with cold water. In such a case the normal vestibular reaction is demonstrated, while if the same ear is irrigated with hot water the slow component alone of the nystagmus is produced. This, in their opinion, has added another localizing test of considerable importance. The fact that this patient had a bilateral sixth nerve paralysis, of course, rendered this test useless. The eyes were fixed more or less in the median line and neither component when directed toward the outside could be elicited.

This case is interesting also because it casts discredit on the observation usually made of changes in the skull due to increases in pressure. I have in other cases opened the skull when the X-ray picture has demonstrated changes in the skull and have found these changes to be entirely absent. It is most interesting that in this case these changes are seen to be due to changes in the brain.

Dr. Walter R. Parker: The case is particularly interesting from an ophthalmologic standpoint for two or three reasons. I think possibly I would put first the satisfaction of postmortem demonstration of double sixth nerve paralysis. As a matter of fact, our best postmortem findings rarely demonstrate the cause of bilateral sixth nerve paralysis. As Dr. Barrett has suggested, they are probably due to pressure at the base, secondary to increased intercranial pressure.

The blindness in this case might be explained, it seems to me, from the postmortem findings in a most interesting way. As you already know blindness in cases of brain tumor does not come from the choked disc. It may come on late from the secondary optic atrophy, but one may have a swelling of the optic nerve of four or six diopters with good vision. The blindness might be produced by double homonymous hemianopsia, the lesions in the region of the calcarine fissure on the one side producing a right sided blindness and the lesions on the other side a superimposed left sided blindness.

I would like to add my testimony to that of Dr. Canfield to corroborate his disappointment in the postmortem findings in cases of areas of erosion as shown by the X-ray. They very frequently lead to disappointment.

Dr. Harry B. Schmidt: The clinical aspects of this case are very interesting to me from two standpoints. One is that the patient had a tumor at the head of the pancreas, quite large, without jaundice. This was explained by an anomaly of the common duct. An unfortunate accident in diagnosis could have been easily made had jaundice been present. The other is that with such extensive metastases there must have been some involvement of the bone marrow. Is it known whether the red cells were seen in a smear just before death?

Dr. Barrett: I think there were smears made but not just before death.

Dr. Schmidt: I should imagine that you probably would have found nucleated red cells in the blood. I never expect to see more metastases and I presume there were many metastases present which we could not see.

Dr. Barrett: I have little to add to the discussion. The other case of carcinoma which we had was metastatic from the breast. Most of the metastatic carcinomas come from the uterus, and especially from the so-called malignant deciduomata. Where you get metastases in the cord they generally involve the bone. However in the brain you rarely get metastases in the bones of the skull, but more in the brain itself.

An interesting point in this case in the questionable character of the information gained from the X-ray examinations.

The interpretation of the plates by the Department of Roentgenology was that there was an erosion of the petrous portion of the left temporal bone. At the autopsy no change in the bones was to be made out. There was, however, a large cystic degeneration of the temporal lobe lying adjacent to this region. Whether or not such a difference from the normal condition of the brain substance would explain this, is a matter of some interest.

DEMONSTRATION OF A CASE OF GUMMA OF THE TESTIS, ASSOCIATED WITH TABES.

Udo J. Wile, M.D.
(From the Clinic of Dermatology and Syphilology, University Hospital, Ann Arbor, Michigan.)

This patient is shown for the rather remarkable coincidence of an active syphilis in association with tabes. It has long been known as a clinical fact that syphilis of the central nervous system is as a rule unassociated with active manifestation of syphilis in other systems. As a matter of fact, however, I think that the coincidence of the two, is perhaps more common than is generally appreciated. The fact that patients with tertiary syphilis and syphilis of the skin and mucous membranes in general are not subjected to routine neurologic examination would probably account for a large number of cases which remain undiscovered. It is, however, a fact, I think, that tabes and probably too, general paresis, represent exceptions to the rule of this coincidence. I don't recall off hand over four or five cases of tabes dorsalis which were associated with active syphilis demonstrable from clinical manifestations. At autopsy a number of casese of tabes unquestionably show syphilitic changes in the viscera.

The patient here is a well marked tabetic. He came into the Hospital for his tabes. In the routine examination it was noticed that he

had a very large tumescence of the left testis. The organ was firm, tense and painless and it was a matter of conjecture at first as to the nature of the tumor. From the standpoint of differential diagnosis one had to consider the possibility of a tuberculous epididymitis, of a traumatic orchitis, of a sarcoma of the testis, and lastly of a gumma. We ruled out the various diagnoses other than gumma entirely objectively. Against a tuberculosis was first of all the patient's general condition and advanced age and the absence of tuberculosis elsewhere, which of course, were merely presumptive, but objectively there was no primary epididymitis here. The testicle was enlarged as a whole, a massive, firm tumor which had none of the clinical symptoms associated with tuberculosis of the organ. The diagnosis of sarcoma had next to be considered. Against it was the lack of infiltration of the surrounding tissues, the freedom of the organ within the scrotum itself. Difference in texture I think is a very important point differentiating sarcoma from gumma. The sarcoma represents the hardest tumor with the exception of teratoma, that we have in the testis. They are of extremely rapid growth, reaching the size sometimes as large as a child's head in a short time, always associated with cachexia. Carcinomata had to be considered also. These are excessively rare in this organ and only came in for consideration very briefly. The diagnosis of gumma rests upon involvement of the organ itself, its painless character and its very characteristic rubbery feel, and the absence of any other assignable cause for the tumor.

Under treatment for general syphilis the organ has decreased in size about half, but as frequently happens in these cases, softening has occurred, and with this central softening a gumma of the skin has appeared on the surface. The organ has remained painless. It is now, however, perfectly possible to feel the outline of the organ.

The question arises as to the further therapy of this case. It is now a mass of necrotic tissue. A priori it is bad surgery to operate upon luetic processes provided one does not know ahead of time that they are luetic. The organ is functionless and represents a focus of further dissemination. It is now discharging and the organ should be removed with the full knowledge, however, that one is removing a gummous mass. With the surgical treatment the patient should be subjected very vigorously to antisyphilitic treatment.

The case is shown on account of the association of a neurologic late syphilis, tabes, with an active syphilis of the testis.

DISCUSSION.

DR. CARL D. CAMP: There is probably nothing I can add to Dr. Wile's presentation of the case further than to say that the case is an ordinary advanced tabes from a neurologic standpoint. There is one point of interest in the diagnosis which might be mentioned. It is well known that in tabes deep sensibility is diminished or lost. One of the signs of tabes is the possibility of firmly compressing the testicle, or eyeball, without producing pain. It is therefore quite possible, and I have seen it occur, to have a traumatic inflammation of the testis, or a tumor of the testis which is absolutely painless in these cases.

OBSTETRICS AND GYNECOLOGY AMONG THE ARABS.

H. G. VAN VLACK, M.D.
(University of Michigan, 1910. Mason Memorial Hospital, Bahrein, Persian Gulf.)

These remarks refer chiefly to the Arabs in and about the Bahrein group of islands in the Persian Gulf but in a general way they apply to all Arabs. In fact they are true of all Mohammedan communities which are governed and guided by the Koran and the traditions of Mohammed. The slight differences are caused by the varying interpretations of the book and the traditions based upon them.

Since in a Moslem community a physician only sees the lower grades of Arab women, very little of this paper is based upon personal experience but upon data furnished me by Mrs. G. D. Van Puersen and others of the Arabian Mission to whom I am profoundly grateful.

Arab women marry very young, many when mere children. This state of affairs is due to the fact that the Arabs are so amorous and lacking in self control. The more usual age for the Arab girl to be married is from ten to fourteen years. If the girl is not married before her first menstruation, her mother sees to it that she is married as soon after as possible. Those who marry very young girls are supposed to have no sexual relations with their wives until after the first menstruation. That they often do not wait is proven by the fact that many young wives bring forth their first children before they have ever menstruated.

Since all males are forbidden to see or treat women, obstetric work naturally falls to the lot of women, which accounts for the strong position held by the Arab midwife. She is of necessity an old woman. From the samples I have seen, they are the dirtiest and ugliest of the Arab women, who are not cleanly at

their best. One of the things for which they have quite a wide reputation is the causing of abortions in the case of illegitimate or undesirable pregnancies. There is quite a flourishing trade in camphor gum here due to the fact that this is a favorite remedy for bringing on an abortion.

The lying-in room selected for the Arab woman is a dark, unused chamber without windows. The reason for the selection of such a room is that the confinement is supposed to render the room unclean hence unusable as a prayer room and unfitted for the entrance of a man. The confinement takes place on the dirt floor, over which is spread a bit of gunny sack on top of which is placed sand to catch the blood and discharges. This is the Arab accouchment bed. The patient has on her oldest and dirtiest dress. All through the confinement they use only dirty rags and since the Arabs have still to learn the value of cleanliness, the great wonder is that the mortality is not greater than it actually is.

The preparatory treatment consists of a copious draught of a vegetable purgative tea, composed largely of senna, but which may contain any or all of the many dried herbs found in the local bazaar. A portion of the Koran is tied about each thigh as an aid in the delivery and to insure that the child will be a true believer. The Jews in this vicinity put a bit of the Taurat about the thigh or leg for the same purpose. The midwife palpates the abdomen to determine the position of the fetus. They never examine per vaginam or the mortality would certainly be much higher, since the Arab midwife has absolutely no conception of cleanliness. If it is a case in which the midwife wishes to extort an extra fee, she says that the position is abnormal. Then she proceeds to manipulate the uterus through the abdominal wall or steps on the patient's back to cause the fetus to assume the correct position. The midwives also use this back massage to hasten the labor. However, it must be said to the midwife's credit that she is often able to do a version. All manipulations are done under the covers since under no circumstances is it permissible to expose the patient.

The delivery is accomplished in the sitting posture. The patient sits on the floor during the pains, the knees drawn up, one woman holding each knee, and one at the back to press during the pains. Between the pains during all stages of labor the patient is made to walk. No instruments are used, in fact nothing is introduced into the vagina. So every patient who cannot be delivered without aid has to be taken to the "Frankee," foreign doctor, or the mother and child are allowed to die. Too often the latter course is chosen rather than go to the hated foreigner. The cord is tied with any old bit of rag that may be handy. It is cut with an old pair of scissors that have passed their day of usefulness. The cord is cut and tied about four to six inches from the body of the child as soon as the latter is born. Then a very tight bandage is tied about the abdomen of the child and it is wrapped up tightly in swaddling clothes. The mother then has a tight bandage placed about her abdomen to keep the uterus contracted. The placenta is usually delivered while the patient is standing. If the placenta is adherent or slow in being delivered, the patient lies down while the midwife stamps on the abdomen to hasten matters. Let it be remembered that all this happens on the floor and dirty sand where the blood and excretions have fallen. The placenta is delivered into the sand, no basins being used. When this is completed, the gunny sack with the sand and excrements is picked up and dumped on some refuse heap. It is seldom that they have to go far to find such a place as they are frequent and almost invariably within the town limits.

As soon as born the child is wrapped tightly in some black cloth to keep away the "Evil Eye" or devil. They generally put on a bit of green or yellow rag to keep away any infection from the eyes. If the baby's eyes become infected, (not by any means a rare thing), they use the mother's milk as an eye lotion. Better still if the cord has fallen off, it is soaked in a two ounce cup of water over night. The afflicted eye is then washed in this lotion which is said to be a sure cure.

According to the Arabs the water in which the baby is first bathed has great power. The young bride pours it over her head to insure that she will conceive. If she has been married some time without offspring, she drinks the bath water whereby her barrenness at once passes away and she becomes pregnant. Among the Arabs if the wife does not become pregnant it is the woman's fault. It never occurs to them that the man may sometimes be at fault although syphilis and gonorrhea are very common.

The treatment of the puerperium is most original and interesting. During the first twenty-four hours after confinement every Arab mother is called Mariam i. e. Mary, mother of Jesus, and her first food is dates. The reason for this is that according to Moslem tradition, Mary after her confinement found that she was

hungry. She looked up and saw only a bare date palm, as it was not the season of dates. But behold immediately as she hungered ripe dates fell from the tree. These dates are given but onee and that immediately after delivery. The second day she is given a large bowl of astringent tea, made of the many kinds of herbs to be had in the bazaar. This is supposed to aid in the drying up of the seeretions. The first ten days the patient is given absolutely no water to drink. Not even if she has fever is she given any fluids with the exception of one cup (2 ounces) of Arab coffee daily, which coffee is the blackest and bitterest of all eoffees. Also a very little rice is given. The "Salt Treatment" commences on the first night and lasts until the tenth night if the patient is unfortunate enough to live through until that time. There is inserted into the vagina a solid piece of rock salt, whieh has been filed so as to fit snugly. The midwives keep an assorted stock of these on hand ready filed in various sizes and shapes. In the more difficult cases solid sticks of alum are used in place of the salt. The sufferings of the patient can only be imagined when these violent astringents are introduced into the raw and lacerated vagina.

According to the Arabs this "Salt Treatment" is necessary to prevent infeetions and bad odors common to the very damp elimate of the Bahrein Islands. The Arabs have a great dread of odors, and believe that most diseases are due to bad odors getting into the body. If a patient has a wound he will plug both nares with bits of rags, insisting that this will keep away the odors and thus prevent an infection. But the real reason of the salt treatment is that the husband demands that all vaginal secretions be dried up as soon as possible. Then if one probes still deeper into the Arab mind the most important reason of all will be found. They insist and use this treatment so that the vagina will not be relaxed as a result of the pregnancy and delivery, and the Arab's sexual passion fail to be gratified. After forty days the husband examines the vagina by full daylight. Twilight or candle light will not do. The vagina must be absolutely dry and pale pink in color or he will divorce his wife. If the woman passes inspection the husband is willing to eohabit with her. Those who have many wives wait the forty days but the less fortunate will not wait but demand the inspection before the set time.

This "Salt Treatment" is not confined to any one of the Arab sects but is common to all Arabs about here although it is not used by the Persians or the Jews. As far as I have been able to find out it is only employed in and about the Bahrein Islands. It is reported that it is not found among the Bedouins, but I am told that it is used by some of the people in the interior, the sheiks espeeially employing it to increase their sexual pleasure.

As a result of this treatment the Arab women here very seldom bear but one child, while the Persians and Jews have large families. The reason for this is very apparent since atresia of the vagina is the general result of the "Salt Treatment." As the vagina beeomes more and more elosed, menstruation beeomes more and more diffieult. The pain and baekaehes increase every month, while the blood diminishes in amount if she menstruates at all. This process goes on until a tumor appears in the abdomen or the pain beeomes unbearable and the patient seeks relief. In some cases rupture into the abdomen occurs; less often into the reetum or bladder. Death is a common ending. The midwives spoken of above sometimes operate for the relief of this condition according to the following method: They use a long hand-forged iron nail, which is forced through the scar tissue into the mass, if the thrust is lueky. Many times it goes into the bladder or into the rectum. If the patient dies "maketuub," it is written, it had to be so. If the patient gets temporary relief, the midwife takes the glory.

The Arab women of the higher social circles do not often come to men surgeons. This is especially true in all complaints peculiar to women, so the distension arising from the vaginal atresia is allowed to go on until the uterus ruptures. Ruptures into the rectum or bladder do not give relief for long. However, a goodly number of slaves and those in the lower soeial circles do come to us with all degrees of atresia. For convenience the following divisions may be considered:

1. Those having only the cervix closed.
2. Those having the cervix obliterated, the top of the vagina being a blank wall of cicatricial tissue.
3. Those having a part but not the whole of the vagina obliterated.
4. Those having the vagina totally obliterated up to the labia.

In our experience those of the third class are the most common, while those of the second class have proved to be the most diffieult to cure by operation. The scar in these latter cases seem to be most dense and the former lines of the vagina or cervix most difficult to follow. In those of the third and fourth classes the former direction of the vagina is quite

easily followed, once the deep lavers of cicatricial tissue have been passed. The cervix is usually unrecognizable. When the mass, the distended uterus, has been reached it is easily pierced and opened with a pair of dissecting scissors giving exit to old menstrual blood of a dark brown color of the consistency of apple butter. The size of the tumor depends upon the length of time the condition has existed. We have had them varying in size from that of an orange to that of a five or six months' pregnancy.

The following are two typical cases:

(1). Arab woman aged about 18 years. Has had but one pregnancy, child living. Following the delivery of the child the "Salt Treatment" was used. Since then she has menstruated but once or twice, some ten months after the delivery. Has had no symptoms of pregnancy. Since the last menstruation there have been cramping pains of increasing severity recurring at the time each menstruation should have taken place. Husband refused to allow operation or even an examination.

(2). Slave woman. One child, "Salt Treatment" used. Has menstruated four times since this pregnancy with decreasing blood and discharge while the pains have increased. Now no discharge at time of period, only pains constantly increasing in intensity. She came during one of these paroxysms, suffering intensely and ready to undergo anything to be rid of her pain.

Examination revealed a tumor the size of five months' pregnancy. Vagina was only one inch in depth, crossed at the top by many bands of cicatricial tissue. Even the walls were of scar tissue in place of the vaginal epithelium. No trace of the cervix to be found.

Operation.—Chloroform anesthesia. Retractor inserted and heavy weight attached. Vagina opened at the most superior point. Opening continued by blunt dissection with scissors until the mass was reached. During the operation the assistant pressed down on the mass. During the dissection great care had to be taken not to open the bladder or rectum. Mass opened by the points of long scissors. The usual "apple jelly" content came out in great abundance. Uterus completely emptied and irrigated with hot boric solution until the return flow came back clear. A large sterile self retaining glass douche nozzle introduced and left in place to prevent the walls of the canal closing again. Tube left in place twelve days, the patient being given a daily douche through the tube. Since the patient passed from under observation after the twentieth day, it is too early to report on the permanency of the cure in this case.

As I have been here only a year it is too early to report the results of such operations. I can only say that our methods of keeping the opening patent are unsatisfactory. To make a permanent cure there must be devised a better method for keeping the new vagina and cervix patent.

DISCUSSION.

Dr. Reuben Peterson: I may say in explanation that Dr. Van Vlack, as most of you know, is a graduate of the University of Michigan in the class of 1910. He was sent to Busrah by this University which maintains a mission there. He sent me this paper for publication and it seemed so interesting that I have taken the liberty of reading it to the Society. It is also interesting because just at this time Busrah and the region thereabout is the seat of the war. I don't know how extensively it is affecting Dr. Van Vlack and his work. Just now he is not at Busrah but at the Mason Memorial Hospital at Bahrein.

In reality the condition that follows this "salt treatment" referred to in the paper is practically what you see in congenital absence of the vagina, in atresia of the vagina. I quite agree with Dr. Van Vlack that it is a difficult condition to cure. It is not so difficult to make a temporary artificial vagina and reach either the cervix or the uterus, or to dissect up to the peritoneum where the uterus is absent, as it is to keep the vagina open so that it can functionate. We have had a number of cases in the clinic of absence of the vagina, and I have tried various operative methods. We had one case that approximated the condition he speaks of. This was a girl where the upper part of the vagina was absent. When she was fifteen years old she had her first attempt at menstruation but no menstrual flow. When she entered the Hospital the uterus was distended to about a four or five months' pregnancy. It was extremely difficult to dissect up from below, so in that case I opened the abdomen and found the uterus and the tubes distended with the menstrual blood. Aided by the assistant's hand within the abdomen I dissected up between the bladder and rectum until I reached the distended uterus, punctured it with the scissors, as Dr. Van Vlack has described, and then kept it open until the menstrual blood had drained away. We performed a secondary operation by the flap method, taking the flaps from the labia and skin adjoining the labia and lining the artificial vagina with these flaps. The operation was not entirely successful. I kept track of the case for several years but I don't think the operation was entirely successful, although she menstruated for one or two years. The trouble was that the artificial vagina contracted until there was only a small opening.

We have had a number of other cases of absence of the vagina. In two or three of them we have dissected up between the vagina and the rectum where the uterus has been absent. In one of them I used the same flap method. This was not satisfactory, owing to the difficulty in attaching the flaps

to the upper end of the vagina, and the vagina contracted down considerably. In one case I finally decided to try using the intestine to line the artificial vagina. This case I am going to report later before this Society. Briefly, however, I will say that I used the small intestine, making a lateral anastomosis and using a loop of the intestine for the artificial vagina after dissecting up between the vagina and the rectum. The classical operation as described by Baldwin is to bring down the loops, attach them to the artificially formed vagina and after it is fixed there, to cut the septum between the loops of the bowel. The trouble was that although apparently the loop was long enough to come down it was found after the anastomosis that it was impossible to pull the loop to the vulva without putting too great tension on the bowel, so that I was forced to use only one loop of the intestine. The patient made a good recovery and the operation has been a fairly successful one. The only trouble has been that there was a stricture where the intestine passed through the peritoneum. I dilated that for some time in the Hospital. The patient subsequently married and was here about a month or six weeks ago and is fairly well satisfied with the results. Still I have felt that this is considerable of an operation to perform upon a woman who is not married. I think it is dangerous even though your anastomosis may be very carefully performed. So in a private case that I have had recently I have adopted the suggestions made by an old practitioner of this State, Dr. Charles Shepherd of Grand Rapids, who reported before the State Medical Society about twenty years ago two cases of atresia of the vagina upon which he had successfully operated. He dissected up between the vagina and the rectum and then kept the opening patent by means of a glass plug. In this case which I have under treatment now I have adopted the procedure because this girl was not married and not even engaged to be married and I didn't think I was justified in exposing her to the risk of an anastomosis. The operation was performed about six weeks ago. The vagina has been kept open by a vaginal douche plug. The cicatricial tissue is gradually creeping in and I think the result will be satisfactory. If that is so, I think it is a much better and less dangerous operation than the other.

As far as conditions are concerned, these cases of absence of the vagina, in whole or in part are quite similar to the cases reported by Dr. Van Vlack where the atresia of the vagina resulted from caustics. While it is comparatively simple to reach the uterus distended by menstrual blood, the new vagina, thus formed, will soon close unless lined with mucous membrane or skin. The latter has a tendency to contract no matter how well the flaps may be inserted. In the cases referred to in the paper there could be no objection to making use of the intestine to line the new vagina but one does hesitate to use the procedure in the case of a young woman who may never be married.

THE OCCURRENCE OF EPILEPSY IN THE MEN OF HISTORY.

Harold W. Shutter.

From the medical point of view the study of biography is difficult. It is and has been the custom of biographers so to interest themselves in the social, political and philosophic aspects of their subjects that the pathologic deviations of mind and body have been largely overlooked. Added to this is the fact that the more definite concepts of medicine, neurology and psychiatry are of a relatively recent origin.

Biographic literature still contains much of the charlatanism, superstition and ignorance of the past which, with the apparent aversion of most biographers to consider the medical aspects of their subjects, causes the chief difficulty in any individual case. One must, therefore, because of the general indefinite information as to pathology to be found in most biographies, turn, in an objective manner to the autobiography or literary production of the individual, and combine information found there with that from official records and the memoirs of his contemporaries.

Epilepsy was recognized before the time of Hippocrates. Hercules, Cambyses and so many other characters of mythology and early history are supposed to have been epileptic that it is still occasionally called the sacred sickness. Lucretius a Roman poet describes accurately a grandmal attack in his poem on the epileptic.

Of late, there is a growing tendency among neurologists to consider epilepsy only as a symptom and one notes the frequent use of such terms as the epilepsies or epileptoid psychoses. These expressions include the typical grandmal petit mal and Jacksonian types, plus the host of allied conditions or equivalents, all having in common as their origin, irritation arising from or reflected from the brain. In studying such epileptics as are of interest in this paper one is not so much concerned in the attacks themselves, beyond the possibility of diagnosis, as in pre- and post-convulsive stages, the equivalent attacks and the mentality of the individual between attacks.

The pre-convulsive stage or aura manifests itself in symptoms of the motor, sensory, vasomotor or psychic varieties and may continue from a few seconds to several days. The motor phenomena are twitchings of muscles, groups of muscles or entire limbs. Frequently aphasia is present. The sensory symptoms are paraesthesias, formications, numbness, pain, peculiarities of smell or taste and visual disturbances.

Premonitory symptoms in the vasomotor system are pallor, flushes and disturbances of secretion, especially perspiration. Mentally one finds anxiety, timidity, depression and various hallucinations extending through to temporary insanity. One author, after referring to Dostoyeffsky's symptoms, has said that the most common psychic aura is a sudden acceleration of the imagination.

Usually the convulsion is followed by sleep from which the subject emerges complaining of intense headache. In not rare instances the patient passes into a trance-like state spoken of as epileptic automatism in which apparently purposeful movements are performed, the victims even going on journeys, followed later by complete amnesia. Frequently crimes are committed by these individuals and the condition is of great medicolegal interest. Acute mania and transitory delusional states are also found after attacks.

Equivalent attacks are classed by Turner, as follows:

First, psychical attacks consisting of automatic actions, changes of expression, tremors and amnesia; second, mania and impulsions, frequently associated with suicide and homicide; third, dream states; fourth, transitory delusions; fifth, catatonic stupor; and sixth, such symptoms as headaches, pseudo-angina, nausea, vomiting and the like.

Several traits or peculiarities of temperament appear to be common to most epileptics. Egotism, obstinacy, mobility of character and sentimental religious fervor are noted. They are frequently irritable, morose, suspicious and given to great variations of mood. Hypochondria is common. The ability to judge right from wrong seems frequently impaired and they are often subject to dangerous impulsiveness, indecision, apprehensiveness and fears.

It has been convenient to group the individuals here considered under the following heads: political and military leaders, religious leaders, and the broad class of philosophers, artists, novelists, poets, dramatists, actors and the like. It is found that in each of the three main classes, certain traits of the epileptic temperament predominate in guiding the direction of activities, while others, although present and prominent, are more latent as regards the course of action. This is well brought out in the political and military leaders where one is surprised to learn the identity of several who at one time or another exhibited convulsions or epileptic equivalents.

Plutarch's Lives contain several interesting statements concerning the falling sickness of Julius Caesar. The material for Shakespeare's play of that name came from North's translation of Plutarch, particularly the lives of Brutus, Cassius and Caesar, and from literary interest one may well consider the tragedy with the biography. Much is made in the play of the convulsive attacks and the changing mentality of Caesar, all of which has its foundation in Plutarch. In the first act you will recall the attack in Spain and a second while swimming in the Tiber, also Casca's description of the refusal of the crown, at the end of which he says: "He fell down at the market place and foamed at the mouth and was speechless," to which Brutus replies: "'Tis very like he hath the falling sickness." In North's translation one finds the following description of Caesar. "For concerning the constitution of his body, he was leane, white and soft skinned, often subject to headache and otherwhile to the falling sickness: (the which tooke him the first time in Corduba, a citie of Spayne). He yielded not to the disease of his body, to make it a cloke to cherishe him withall, but contrarille tooke the pains of warre as a medicine to cure his siek bodie, fighting always with his disease," etc. One also finds reference to Caesar's attack before the battle of Thapsus, he at that time being carried to the rear where he lay on a cot until the symptoms subsided. Suetonius, a Roman historian, is also authority as to Caesar's condition and mentions two attacks while transacting business. Dr. Gervinus, a German, in his "Commentaries of Shakespeare" calls especial attention to the changes in Caesar's mentality as brought out in the play, and having their basis in the statements of Plutarch. He notes how Caesar became superstitious, suspicious and apprehensive. Where his former boldness had carried projects to completion his present indecision and doubt cause their failure. Moulton in his Shakespeare as a dramatic artist says. "Assassination is a less piteous thing than to see the giant intellect, by its very strength unable to contend against the low cunning of a fifth rate intriguer." If one takes this statement, remembering that suspicion, superstition, apprehensiveness and indecision are frequent symptoms of epileptic dementia, one has, I think, an excellent key to the tragedy. (3, 10, 11.)

The Claudian Julian family which followed Caesar is of interest chiefly as a study of heredity and degeneracy. Caligula, Germanicus and Britannicus were epileptics and Nero

is said to have had the epileptic tendency. (See Ireland "Blot on the Brain.") (5, 16.)

Another family which challenges the attention is that of Peter-the-Great. Ireland says that it was probably through the custom of selecting the queen from the most beautiful of the peasant girls that degeneracy came into the family. Feodor, a half brother of Peter was weak minded, Ivan imbecilic and epileptic. Sophia, an own sister, was extremely cruel, and Peter, says Moreau, suffered from nervous attacks which later degenerated into epilepsy. In the Memoirs of St. Simon one finds the following description of the great Russion: "If he gave thought thereto, his mein was majestic and gracious, else was it forbidding and almost savage, his eyes and face were occasionally distorted by a tic which rendered his expression wild and terrible." Peter, who has been called a singular medley of self sacrifice and tyranny, humanity and cruelty, in temperament falls well into a class whose egotistic obsessions have force and ability enough behind to give them power. Of his six sons, five died in childhood, the sixth was put to death by his father. (1, 5, 6.)

Mignet is the authority for the statement that Charles V. was epileptic. The Emperor was easily the most powerful ruler of Europe in his time, and while perpetually absorbed with wars and great enterprises was tried both by good and bad fortune. In some things he was mean and unscrupulous, was subject to fits of melancholy and deeply religious. Mignet after describing the deformity of his jaw and his difficulty of speech states that he is known to have had several fits of epilepsy which later in life took the form of severe headaches. One of his grandsons was epileptic. (2, 12.)

Marlborough from boyhood was subject to periodic attacks of headache and giddiness which affected him (acording to his correspondence) particularly about the time of the battle of Blenheim. At 66 he returned to England, where he suffered convulsive attacks. Coxe in his biography, notwithstanding the statements of the Duchess, believes the Duke to have been affected mentally. Nisbet declares that epilepsy reduced the vigor of both his mind and body. A summary of Marlborough's condition is left by his wife in a legal paper written to forestall any effort to invalidate the Duke's will. She mentions the first attack, the recurrences, and his mental condition between attacks. Coxe says: "The Duchess has been criticized for leading her infirm and suffering husband into public view, and exposing to the multitude so pitiful a spectacle of human inbecility." One daughter died "long afflicted with a tedious disorder which she bore with consummate fortitude and piety." Her extremely religious nature is noted. (2, 13.)

The possibility of epilepsy in Napoleon, after one hundred years of controversy, still continues to raise discusssion. Constant in his Memoirs mentions the exhibition of a tic consisting of frequent and rapid elevation of the right shoulder, which those who did not know him sometimes interpreted as a sign of dissatisfaction and disapproval, seeking uneasily wherein they could have failed to please him. Bourrienne, Napoleon's private secretary for sixteen years, declared he never saw symptoms of a general attack. He mentions the tic as extending also to the mouth and lips. One of his feminine admirers describes him as irritable, morose and splenetic from boyhood, domineering, with a disposition alternately sullen and impulsive, and lacking in all consideration for the feelings of others. He had a frightful anger and a winning smile. Nisbet, using Mineval as an authority, mentions the significance of reports of convulsions and the possible relation of the Emperor's greatness to the epileptic habit. Corvisart, Napoleon's physician says Madame de Rémusat described the Emperor's awakening from sleep as "generally melancholy and apparently painful, and that not infrequently he had convulsive spasms in the stomach which made him vomit." The latter condition may have been associated with his gastric disorder, he later dying of carcinoma. Laine, in the Revue de Deux Mondes, considers the Emperor to have been a psychic epileptic with gigantic megalomaniacal illusions, impulsiveness and complete absence of moral sense.

Radestock describes a definite hallucination during the Russian campaign. Oppenheim, Radecliff and Clark all mention Napoleon as epileptic. (2, 6, 8, 14, 15, 16, 17.)

Greville's Memoirs of the Reign of Queen Victoria contain several references to the convulsive attacks and failing mentality which came over the Duke of Wellington in the last twelve years of his life. Many times he caused diplomatic circles great concern because of his unwillingness to resign himself to private life. Lyndhurst once said he hoped His Lordship would retire before he became a dotard like Marlborough or a driveler like Swift. Greville, once lamenting the Duke's condition said: "It becomes impossible not to regret that in his seventy-third year and after three epileptic fits he was not permitted to hold himself free from

the trammels of executive government." Wellington's temperament became markedly changed. Irritability, unreasonableness and fits of anger eventually gave way to delusions. On February 9, 1841, Greville says. "The Duke had an attack the other night in the House of Lords and was taken home speechless, but not senseless. It was severe but short and after the stomach was relieved he rapidly recovered." The London Times for September 16, 1862, contains the following article: "Of late years increasing infirmities manifest, though energetically resisted—the treacherous ear (he became deaf) the struggling utteranee, and the tottering step—all told their tale, and suggested that the greatest man of his age might live to illustrate the decay from which no genius is secure." (2, 39).

In summarizing the prominent eharacteristics in the temperament of all these men, one is impressed with their resolute, self confident attitude toward surroundings. Extreme egotism, impulsiveness and a relentless nature are common to most of them. To a large extent religiosity and superstition are not marked. Utter disregard of morals is found in the inner lives of a number.

The two most illustrious religious celebrities who have been christened epileptic by tradition are Mohamet and St. Paul. In an interesting article written by Howden in 1872 he says: "Irritability, suspieion, impulsive violenee, egotism and strong homicidal propensities are the most commonly observed eharaeteristies of the insane epileptie; but in strange contradistinetion with these we frequently find eombined a strong devotional feeling, manifesting itself, may be, in simple piety or in decided religious delusions." Renan in his book on the apostles says of Paul: "His health was always poor because of a strange infirmity which he calls a 'thorn in the flesh,' and which was probably a serious neurosis. His moral character was anomalous, naturally kind and courteous, he became ferocious when excited by passion. As an enthusiastie leader of the Pharisees he was among the fiereest perseeutors." With permission of the high priest he set out for Damascus to arrest the leader of a band of Christians quartered there. On nearing his destination he suddenly fell to the ground, unconscious. An hallueination followed in whieh Christ appeared to him. For three days he neither ate nor drank, meanwhile suffering from fever, the latter a term used indiseriminately in the Bible to indicate sickness. During Paul's convalescenee he experienced hallucinations from which he emerged converted. Renan in his Life of Paul considers his gospel to be illogieal in several places. It was, however, the bold spirit of that disciple which pushed Christianity out to sea, probably saving it from the fate of myriads of other religious cults. Lombroso, William James and Clark of N. Y. mention Paul as an epileptic. (4, 8, 17, 18, 19, 20.)

Beyond a doubt the divine inspiration which prompted Mohamet in founding the religion which bears his name came from his own morbid brain. Probably the best authority on his malady is Sprenger, who has eollected most of the available evidenee. Muir of London mentions a tradition deseribing Mohamet's visitations. "Sometimes Gabriel eometh and communicateth the revelations unto me, as one man unto another, and this is easy; at other times it afflicteth me like the ringing of a bell, penetrating my very heart and rendering me, as it were, in pieees, and this it is which grievlously afflicteth me." Apparently here one may interpret painful attacks possibly epileptie in origin. Ayescha, his favorite wife, observed the prophet during revelation on a eold day, and when it was over noticed drops of sweat on his forehead. Othman, watehing the prophet during a visitation of the angel, marked how his eyes turned first toward Heaven, to the right, and later toward the left and down. The attack was followed by sweating, also by a new verse of the Koran. Other traditions are; that he was found red and unconseious, that associated with his attacks he made strange sounds like the erying of a young camel, significant as the preconvulsive cry. The prophet is known to have been cupped, a treatment used often in mental disorders. Ireland says that the silence of the Mohammedan commentators to assertions by the Greeks of epilepsy in their leader, is some of the most conclusive evidence of his malady. Whether Mohamet was epileptie (most authorities believe he was) or hysterieal, one is hardly justified in denying the sincerity of his own belief. (2, 4, 5, 21, 22.)

Lombroso asserts that Dante had epileptie fits, basing his statements on incidents in the "Divina Commedia" in one of which Dante says he fell headlong and lost consciousness.

"He ceased, the gloomy region shook amain,
Still its mere memory bathes with sweat my brow,
Rumbled that land of tears with moaning wind:
A light, vermillion coloured, flashed from Hell:
And wholly vanquished my palsied mind.
Even as a man whom sleep o'ertakes, I fell."

Beyond the statement of Lombroso, considered unwarranted by Hirsch, I have found no authority to consider Dante epileptic. (4, 7.)

History is full of strange religious cults which have arisen endemically throughout all time. Almost invariably these bands have at their head some mental deviate. Frequently epileptic dementia has been demonstrated as the source of their inspiration. Anne Lee, founder of the Shakers was such a character, says Clark, who is also authority for the statement that Joseph Smith suffered from epilepsy. (See article in *Boston Medical and Surgical Journal,* Jan., 1915.) (2, 17,)

The chief things of note about the religious epileptic are the highly developed imagination, the power of leadership and the egotism so marked in their religious sentiment. These men defend their assertions boldly and resemble the military leaders in the manner used to establish their faith. Mohamet by oratory and force was but a few years in winning a large part of Arabia.

Hallucinations and delusions probably reach an extreme in the religious fanatic. Clark, in the article previously mentioned, shows the high degree of development of the imagination in the epileptic, and says: "In time it will probably seem less strange that much of our religious conception of Heaven, which has been fashioned by epileptics out of their unconscious conception of the mother life, should be so satisfactory to the entire human family."

Turning to the third main class here considered: Swedenborg seems to have been peculiar from birth. As a child he had peculiar psychic alterations. Maudsley in the *Journal of Mental Science* for 1869 considers thoroughly the mental condition of the philosopher. He mentions the early manifestations as a child and the probability of their becoming typically epileptic. At one stage in his life he had an attack of acute mania. At 56, Brockner, his landlord in London, found him foaming at the mouth and declaring he was the Messiah in person. He is said to have removed his clothing in the street and rolled in the gutter (an inclination to such exposure is common in epileptic dementia). Nisbet says the outbreak mentioned occurred with an epileptic seizure, and from this period onward Swedenborg's delusions were all of an insane character. The main points in his own description of an attack are: a clamor under the head, rigor, a din in the ears, sleep; shivered later as if the winds rushed together and shook him, communed with Christ, and on coming out wet with sweat, he said he had been holding communion with the Lord. In his work he demonstrates how his mind struggled to maintain the reality of his delusions. Maudsley, Nisbet and Ireland consider Swedenborg's condition to have been epileptoid in origin. (2, 5, 23.)

Of Balzac, Nisbet says: "At school Balzac had an epileptic seizure which so alarmed his teachers that they urged his parents to take him home." Of singular import however is the fact that similar symptoms are never known to have recurred. Balzac had many of the peculiarities attributed to men of genius. His work, however, was accomplished by an almost brutal mental and physical effort, he working always from twelve to eighteen hours a day. Balzac once wrote to M. Hanska (Sanders' "Balzac") that if his misfortunes did not kill him, he feared they would destroy his reason. Gould in his "Biographical Clinics" throws light on the so-called alarming attack at school by showing that the boy of fourteen had not had a vacation in seven years, had completed "Treatises on the Will," and, unknown to the professors, had read a greater part of the rich library of the college. Knowing this, Gould scoffs at the idea of blaming "pathology" or "heredity" for the boy's break down. (2, 24, 25.)

The grandfather of Alexander Dumas married a full blooded negress at San Domingo. The son of Gen. Dumas shortly before death married a young woman, the mother of Alexander. "The alliance," says Nisbet, "was physiologically unsound, for Madame Dumas was subject to epileptic fits—she had one which attracted public attention at the performance of her son's first play." The author himself never exhibited epileptic symptoms. (1, 2.)

Dostoyeffsky, one of the great trio in the Russian literature of the last century, was undeniably epileptic; and his own disease as interpreted and incorporated in his works makes up a considerable portion of their content. Clark has considered every phase of the great author's malady in an article found in the *Boston Medical and Surgical Journal* for January, 1915. Dostoyeffsky had numerous attacks; several times they occurred at the homes of friends who have since described them. The preconvulsive aurae from his own statements were elaborate and somewhat erotic in type. and, much of the writer's inspiration was received in the moments preceding his convulsive seizures. His first attack came during exile and was followed by a series extending over many years. Dostoyeffsky's mother is described as exalted and epileptic. Clark says, "All the out-

croppings of Dostoyeffsky's egotistic and infantile feelings and ideas in the minor and beginnings of the major attacks, are over and over again elaborated in his novels." It may be added that for the most part the chief characters of his novels are epileptics. (4, 17.)

A very interesting case is that of Byron. "On the evening of February 15, 1824," says Jeaffreson in his book, The Real Lord Byron, "while sitting in Colonel Stanhope's room he had his first epileptic seizure in the presence of several witnesses to the effort he made to regain his self command. The attack was sharp, but short, and he seems to have come fairly out of it in twenty minutes. The poet had five fits in three days, and two months later he passed away." The immediate cause of his death was said to be 'a fever arising from a chill.' Probably the end was hastened by the excessive bleeding to which the patient was subjected, the doctors fearing that the epileptic attacks would be followed, as they so often are, by mental derangement. Byron came of weakened stock on both paternal and maternal sides, and the irresponsible, insincere nature of the poet is known to all. "His diary," and one may add, actions, "reflect a destempered mind," says Nisbet. It would be of interest to know whether the convulsion alone or the convulsion and its resulting lethargic state extended over twenty minutes. White says one should always suspect attacks of such long duration, appearing for the first time in men of this age as being due to paresis. (2, 26.)

Gustav Flaubert the French author, is an undoubted case of epilepsy. Gould has well summarized his case in his Biographical Clinics, where he says that contrary to the general belief, Flaubert's attacks began early in life. His first definite attack after reaching manhood occurred in Paris and was noctural in appearance. One of the peculiarities of Flaubert's malady was the aura in which he experienced a peculiar yellow flame, first before one, then the other eye. This he called his "golden vision." Du Camp cites his friend as a great genius lost to the world because of epilepsy. After enduring the attacks several years Flaubert's memory began to weaken and his nature changed greatly. He became morose, hypochondriacal and sensitive for the most part avoiding the public. (2, 25.)

Tom Sheridan, famous for his "School for Scandal" and the "Rivals" came from a family given to insanity and ne'er do wells, and is said to have become epileptic in the last few years of his life. Nisbet says, "At the age of 66 he was seized with epileptic attacks." In a letter written to his son (found in several biographies) a short time before death he mentioned trouble with varicose veins and 'his secret alarming complaint.' Starnforth in his life of Sheridan says, "After a succession of shivering fits, he fell into a state of exhaustion, in which he continued with but few more signs of suffering till his death. His nature was one of careless disregard for all about. He was thriftless, extravagant and lived with considerable indifference to the usual moral check." (2, 27.)

"Handel," says Lombroso, "was subject to furious and epileptic rage." Late in life after a stroke of apoplexy he became for a time demented. As a teacher he frequently lost all control of his temper and once is reported to have held a prima donna out of the window threatening to drop her unless she sang a passage in a certain way. I can find no mention of convulsions in several biographies. (2, 4, 6.)

Mendelssohn came from a highly neuropathic family. Rockstrov in his life of the composer informs us that he weakened rapidly in the last few years of his life; and during the rehearsal of Elijah, his last great work, had many attacks of epilepsy. Henschel in his "Die Familie Mendelssohn" gives a description of an attack at the home of a friend, Mme. Frege. She "found him shivering, with his hands cold and stiff and his head aching violently." He was taken home where the attacks recurred with increasing violence until he died one month later. (2, 4, 28, 29, 30.)

Mozart's mother is reported to have died of a nervous disease associated with convulsions, delirium and prolonged insensibility. (Nisbet). The composer himself died young in a demented condition. During the composition of the Requiem he labored under the delusion that he was being poisoned, frequently swooned away and became practically paralyzed. (1, 2.)

Taschereau says of Molière, the great French playwright, "At the time of his early appearance Moliero was held, even in the provinces, to be a comedian of very inferior order, owing perhaps to a hiccough or throat tic leaving a disagreeable impression of his acting on those not aware of its existence." Radestock and Nisbet on the authority of Grimavest consider him to have been epileptic; and the former mentions his losing time from his work because of convulsions and nervous attacks.

Rachael the great tragic actress was the daughter of a Jewish rag peddler named Fèlix. She was throughout life of an hysterical nature,

and was subject to fits. (Nisbet.) Describing her attacks she said: "Sometimes I fancy that night is suddenly falling and I feel, as it were, a great void in my head and in my mind. Of a sudden all the light goes out and your poor Rachael quite ceases to exist." Tuberculosis was the cause of her death at 37. (1, 2, 31.)

Paganini the Italian violinist of the early last century suffered from childhood with convulsive seizures. Catatonic attacks are said to have kept him in a stupor for hours at a time. Radestock says that the exhaustion which overtook Paganini after a difficult program was similar to that following an epileptic convulsion, and one may add, was probably hysterical in origin. (1, 2, 4.)

Epilepsy, convulsions and epileptic equivalents have been attributed to many others among the greater men of history, but in many cases one is able to prove the nature of the attack to be other than epileptiod in origin, or else sufficient evidence cannot be found to warrant the assumption of epilepsy. The convulsive attacks attributed to Dickens, if one is to believe his friend Forster, were very painful and resembled ordinary cramps. Apparently localized on one side, the absence of other symptoms of epilepsy would lead one to suspect a local lesion of that region. Gould is probably correct in attributing Dean Swift's symptoms to a lifelong ametropic condition of the eyes. Gould also discredits any statements as to Swift's trouble having originated in the labyrinth of the ear. (Gould's Biographical Clinics.) (2, 25, 32.)

Lombroso says Newton suffered from a form of vertigo related to epilepsy. Radestock mentions the severity of his condition which was followed late in life by dementia.

Bevenuto Cellini the Italian artist has been called epileptic. Undoubtedly he did suffer from hallucinations of sight, but the most interesting pathology of his autobiography is his description of the French disease which he acquired from the "fine young servant girl," whom he had in his employ. No mention of convulsions was found. (2, 33.)

Thackeray, says Antony Trollope in his life of the author, was subject during the last thirteen years of his life to painful spasms which were probably the immediate cause of his death. Beyond this I can find no description of the attacks. (2, 34.)

Dr. Johnson was throughout his life hypochondriacal and haunted with the dread of insanity. One eye was useless and he suffered from hallucinations of hearing. Because of his disorder he was fretful, impatient, and irritable, but in consideration of his conditions, Boswell says we should not wonder at his peculiarities. Nisbet attributes convulsive spasms to Johnson. (2, 4, 35.)

'Schiller, sickly as a youth, had several nervous fevers, often going into convulsions or fits." This is a translation from Radestock based on the authority of Emil Palleske. Alfieri, the Italian poet, late in life went into convulsions, says Radestock, referring to the autobiography of the latter. In the English translation of the autobiography, the convulsive attacks must be the severe seizures of gout there mentioned. (4, 6.)

Henry K. White an English poet is considered by Nisbet to have been epileptic. Sir Harris Nicolas in mentioning White's fear of tuberculosis says: "He was not aware that he was generating or fostering in himself another disease little less dreadful and which threatens the intellect as well as life." In another point his biographer says: "He found himself, on his first seizure, too ill to receive his brother." No description of the convulsion was found, White died early of phthisis. (2, 36.)

Blaise Pascal, who discovered the barometric principle, suffered late in life, says Moreau, from convulsions which lasted twenty-four hours at a time. M. Lélut considers his nervous constitution very delicate, he being subject to hypochondria and hysteria. At one time he was paralyzed from the waist down, the paralysis being inorganic in origin. (2, 4, 37.)

One notices on close study of the individuals considered, particularly those suffering from their malady for a period of many years, or suffering acutely for a short time, the tendency for what is probably the same etiologic factor, to manifest itself in disturbances of sanity, as well as to produce the peripheral symptoms of epilepsy.

It must be apparent that from traditional evidence one is unable to say in many of these cases, whether the patient really suffered from epilepsy and its equivalents or whether the symptoms were due to other causes. One questions also in the cases showing convulsions late in life whether or not one should consider them epileptic. Terminal epilepsy is, however, a recognized form of the malady.

In regard to temperament, in the group of philosophers, novelists, and poets one finds a greater variation than in the other two large classes. Independence, highly developed imagination, tendency to hypochondria, egotism and

moral indifference are perhaps the most frequent traits noted.

The question is often asked, Do the etiologic factors in epilepsy have a function in the production of genius? Lombroso, an extremist, believed genius to be epileptoid in origin, and has a large following. Nisbet says: "Occasionally there is a great intellectual activity produced by the epileptic condition, which seems to be caused by a wave of morbid excitement passing over the different cerebral centers." (See Insanity of Genius). Others, as Hirsch, would in no way consider the possibility of a psychosis or psychoneurosis being a factor in the production of genius or creative ability.

The study of the men considered has been of interest both from the scientific and the literary point of view. One is able to fully appreciate the productions of an author, poet or artist only on gaining a fair knowledge of the individual himself, after which the influence of mental pathology on his production will be apparent. Unfortunately one cannot consider fully any individual case in an article of this length. The purpose here has been simply to collect some of the facts in the cases of the more prominent men who have at various times been considered epileptic.

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DISCUSSION.

Dr. Albert M. Barrett: I have been much interested in Mr. Shutter's paper. It is an illustration of the possibilities open to medical students for doing work somewhat broader than that required in their routine. Casual references to the occurrence of epilepsy in men of historic importance are met with in most treatises dealing with the subject of epilepsy. Mr. Shutter is to be commended for the large list of such characters which he has been able to get together in this paper.

One cannot help but feel that there must be some uncertainty as to the genuineness of the epilepsy ascribed to many of these individuals. The differentiation of attacks resembling those of epilepsy is not easy. Many of these conditions suggest possibilities of hysterical attacks, or, especially in the old, those due to vascular disorders. The significance of these latter conditions, as bearing upon mental development and peculiarities, is quite different from that of an idiopathic epilepsy.

Dr. Carl D. Camp: I have been very much interested in Mr. Shutter's paper. It makes a point which I have often tried to emphasize that with the possible exception of hysteria, there is certainly no disease to which mankind is exposed, which has as much bearing on social life and conditions as epilepsy. Personally I am inclined to believe with Lombroso, that there is a definite relation between epilepsy and genius. One realizes that these men that have been mentioned are not men of great talent. They are abnormal men. I have not studied very deeply into the epilepsies of most of the men mentioned, but I have been interested in the epileptic characteristics of the various Russian writers. In these men one finds internal evidence in their writings that they are epileptic. They have described their feelings and attacks so that one can readily recognize that they knew what they were talking about from personal experience.

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Editorials

A CHECK.

Your check sent to your County Secretary before April 15 will cause your reinstatement to full membership if you have neglected to pay your 1915 dues. Prompt compliance is imperative.

CONSERVATION IN GYNECOLOGY.

To what extent Conservation will hold sway in Gynecology in the future, will depend to no small extent on the health education of the public. The numerous pelvic affections to which the female is liable can, in a great measure, be reduced by a systematic public health campaign.

Woman's very mission in life predestines her to rather thickly populate our hospitals and for this reason treatment of her ailments has developed among the physicians two classes, the earlier "radicalists" who were later to be displaced by the "conservatists."

There is no question that in the earlier days of surgery, before the general introduction of the mircroscope and other modern instruments for diagnosis in our medical schools, too radical measures were adopted to effect a cure. Too many ovariotomies were performed to control menstrual pain, hysteria, insanity and other mental disturbances for which the ovaries were supposed to be the prime disturbers. On the other hand, too many office treatments by the use of tampons with and without ichthyol or boroglycerine or other drugs to reduce inflammation, absorb tumors both real and imaginary and to hold the womb or adnexia in position were indulged in, where we now know that a simple effective pelvic operation will remove the tumor, restore the pelvic organs to their proper position or repair the lacerations of the cervix and perineum. After which repeated "local treatments" are unnecessary and ineffectual.

Tampon treatment for misplacements in the pelvis is like supporting an unstable building with a prop. So long as the prop remains in place the building has a fair assurance of having the roof uppermost, but once the prop is removed, the old conditions obtain. Even this much cannot be said of local treatment for "absorbing tumors" of the pelvic organs.

We do not hear so much now about the diminution in size of tumors, lessening of "flooding," nor assurance of a general improvement in health with the onset of the menopause as was formerly promised the sufferers by the earlier practitioners; on the contrary, these conditions are at present taken as signals of warning that must not be put off nor overlooked.

Much has been said about the use of the curette. Like any other instrument in the hands of the novice, it is a dangerous instrument, but when properly used there is no other instrument which so effectually aids in diagnosis of cancer of the uterine fundus when combined with the subsequent intelligent use of the microscope. If the average practitioner does not feel himself capable of properly curetting a uterus that is bleeding unnaturally, when no direct cause can be ascertained, it is up to him to send her to someone who can, who will not let the matter rest at a curettage alone but will systematically examine the curettings.

How many surgeons have had to refuse operation on some poor woman who has undergone repeated curettments without microscopical diagnosis which, had it been carried out, would have revealed the nature of the trouble.

The same might be said of lacerations in women past 30 years of age. Every surgeon has found beginning carcinoma of the cervix in the site of old lacerations which might have been discovered early enough to have been cured, had our women been taught to have their lacerations repaired early. To go still farther, the teaching should begin by training the physician to repair the lacerations of the cervix as well as of the perineum at the earliest opportunity after childbirth.

Where secondary repairs are being performed on the cervix, the tissue removed should be subjected to routine, microscopical scrutiny. This of necessity entails much work and added expense to the surgeon but if he is not equipped to have this work done in his own laboratory, there are numerous technical laboratories established in all our cities where this work can be done promptly and at a nominal fee. These laboratories even providing the addressed carrying containers, it being necessary to supply the postage only.

The prime factor in Conservation in Gynecology is knowing to what extent a part may be conserved. This knowledge can only come from experience as an operator and from carefully worked out preliminary diagnosis.

We no longer remove a womb because we are suspicious of cancer. We have means to ascertain positively if cancer be present. Nor are the ovaries removed *"in toto"* because of some obscure trouble. Experiments have shown us that a small portion of an active ovary left in the pelvis will keep the function intact. This is of extreme importance in conservative surgery in the pelvis. For example: One entire tube and ovary may be removed, also the greater portion of the opposite ovary, the remaining tube, which may perhaps be occluded from previous inflammatory attacks, may be subjected to a plastic operation to produce a patent orifice with the result that the woman may later give birth to a full term child.

Observations similar to this are developing a much more conservative view point in recent years than was held only ten years ago.

The whole question resolves itself into one of an "Efficieney Campaign of Health Enlightenment" which includes:

First. The publie in questions of its morality, its marriage laws as well as its general health by putting aside foolish pride, by promoting the movement now on foot for public lectures for women which will cover these danger signals fully and intelligently in a manner that may be grasped by all.

Second. The physicians, especially those who have had no opportunity to follow out the newer methods of early diagnosis and treatment by establishing in our universities *free* courses for graduates in at least this one branch, with the hope of ultimately having the same condition for the other branches as well.

F. C. Witter.

PRESENT ATTITUDE TO GASTRIC CARCINOMA.

It is generally conceded that gastric carcinoma in practically all cases has its origin in the margin of an ulcer. A study of the cases occurring in Ochsner's Clinic for a period of ten years disclosed in all early cases of cancer, a pre-existing ulcer. All of the late cases carried a history that pointed to previous ulcer. Cancer is rare in the duodenum and ulcer relatively common. This is accounted for from the fact that stasis exist in ulcer of the stomach and the ulcer is therefore subjected to constant irritation whereas no stasis exists in duodenal ulcer.

"Clinically it is impossible to differentiate between ulcers that may become cancerous and those that will remain benign" (Smithies). When cancer can be definitely diagnosed clinically, hope of recovery is slight. Only 25 per cent. of such cases are operable and the immediate mortality in resection for cancer is 26 per cent., while that for ulcer is but 9 per cent. It therefore follows that the only effectual way to cure cancer of the stomach is by resecting the ulcer that precedes it. In a given clinic where the percentage of ulcer cases exceeds the cancer cases a larger percentage of cancer cases will be found operable and a larger percentage of the operable eases will recover.

Ulcers of the stomach should always be excised. "The adult population should be warned that attacks of epigastric discomfort aggravated by eating solid food, is sufficient warning for a patient to seek thorough examination at the hands of a competent physician" (Bloodgood).

It will be a long time, however, before this ideal condition, the prevention of carcinoma by excision of the ulcer, will become general and the advanced eases of gastric carcinoma are entitled to such relief as we can afford them.

The only contra-indications for resection in gastric cancer are demonstrable. Metastases in other organs, multiple perintoneal metastases or carcinoma infiltrating the whole stomach. Local glandular metastases, even glands in the pancreas are not contra-indication to resection. In cases where resection is impossible and where obstruction exists at the pyloris, temporary relief should be given by a gastro-enterostomy.

W. T. Dodge.

Editorial Comments

The dividing of the state into sanitary health districts, the enactment of a law providing for the establishment of sane measures for prevention of disease, would be the greatest piece of legislation that our coming legislature could accomplish. That accomplished such a legislative session would go down in the history of our state as having been one of the most valuable sessions of that lawmaking body. The solution of no other problem, the making of other laws, the establishment of other policies, the appropriation of funds for no matter what other purpose would all wane in comparison with such a piece of legislation. Their influence upon the present and future generations, the benefits they might produce, would be all incomparable, less valuable, of minor potential importance to the good, the financial, social and communal uplift that is bound to be felt when scientific health provisions and disease prevention are provided for by our law making body.

It is incumbent upon the medical profession of the state, individually and collectively, to create and foster a lay sentiment that will accomplish and demand the passing of such a law. Each member in his own community and among his own clientele, should grasp every opportunity to point out the value of such a measure and seek to enlist lay interest and support in demanding of representatives the passing of such a law. This educational movement is a responsibility that rests upon the profession and we must not shirk the responsibility.

The coming session of the legislature is still several months distant. Its members, however, will be selected this fall. Candidates are even now becoming active and seeking support; when they come to you, spend an hour with them, enlighten them upon the subject and secure their promise that if elected they will support such a law. Then when they are elected hold them to their promise. Induce the other voters in your community to do likewise Now, as never before, we should buckle down to work and accomplish the desired end. The profession must remain aggressively active during the next twelve months.

The legislative committees of every county society should early present this matter before their members.

We are experiencing a dearth of papers on purely medical subjects. We are dependent upon our members for our original articles and sincerely hope that we may be favored with some timely, practical papers on the advancements in medical pathology, diagnosis and treatment.

Those whose dues were not received by April first will be placed upon our suspended list. You may be re-instated if you send your check to your county secretary by April 15. We dislike to be compelled to cause you to forfeit your membership benefits.

In our May issue we will publish an editorial on "Why Every Doctor in Michigan Should Attend the Detroit Meeting of the A.M.A." It is written by one whose advice you have always respected and followed. In the interval do not fail to plan your work so that you may attend the two important medical meetings in this state this year—the American Medical Meeting in June; the Fifty-first Annual Meeting of the Michigan State Medical Society in August.

The movement that is accomplishing a survey of first aid methods throughout the United States with a view of systematizing the work and outlining an accepted technic is most commendable. The Committee is deserving of every co-operation. Dr. J. C. Bloodgood of Baltimore, Secretary of the Committee, will appreciate the assistance, data, records and experiences that are tendered him by those who are devoting a large part of their time to industrial surgery.

The summer problems are almost again at hand. Are you prepared to meet the demands that will be made upon you to carry the artificially fed baby through that trying period? If not tell us the direction in which you desire information and we will endeavor to publish authoritative articles on those subjects.

The advertisers have some interesting announcements in this issue.

To the member sending in the most valuable and interest awakening suggestions for a program for a summer meeting of a County Medical Society, we will present a copy of the most recent standard surgical text book. For the second best suggestion we will present the sender with a recent medical text book. For the third best suggestion the sender will be presented with a recent standard text book on therapeutics. The suggestions must be received by the Editor not later than May 15.

The Indiana State Medical Journal, editorially comments upon and decries the methods that are employed to obtain clinical material for teaching purposes in the medical department of our State University. It is incumbent upon those in charge of the Clinical work at the University to rigidly exclude those who are financially able to pay their home physicians and surgeons for the indicated medical and surgical treatment. The physicians of the state are partly at fault. Frequent instances are on record where the home doctor has sent a patient to Ann Arbor, accompanied the patient, staid through the operation, charged and has been paid for his time and services in doing so by the patient. The surgeon in charge of the clinic was thus imposed upon. Such practices must henceforth be discontinued and only worthy poor patients admitted to the University's teaching Clinics, in addition to those that are provided with medical and surgical treatment at the University by legislative enactments.

A man cannot be a competent surgeon without a full knowledge of human anatomy and physiology, and the physician without physiology and chemistry

flounders along in an aimless fashion, never able to gain any accurate conception of disease, practicing a sort of popgun pharmacy, hitting now the malady and again the patient, he himself not knowing which.

Do not take authority when facts can be had, do not guess when you can know, and do not think a man must take physic because he is sick.

Our daily papers have, to a certain extent, commented upon the enormous mortality of the European war. The comment of Henry C. Emery, Ph.D., Professor of Political Economy at Yale, in a recent issue of *"Collier's"* is rather startling and broadens one's conception. We quote the following from that article: "After the War—What? The January English figures give total casualties for British forces as 549,467 after sixteen months of war. Taking the population of the empire—as 60,000,000, this is less than 1 per cent. of the total population. The white population of the Confederacy in our Civil war was 5,500,000. In three days fighting at Gettysburg they lost nearly 20,000 of the white population, or nearly four-tenths of 1 per cent of the white population,——the South lost four-tenths as many in three days as the British did in sixteen months.

"In France up to January 9, 1916, the English killed were 84,952; the wounded 248,990, or 1 to 3. In our Civil war the ratio was 1 to 2.5 including in killed those 'who died of wounds.' The English figures include those 'dead from wounds and other causes.'

"Estimates of German losses in killed and mortally wounded up to January vary from 700,000 up. At that figure the loss would be slightly more than 1 per cent. of the total population. Suppose it reached the enormous total of 1,600,000 after two years fighting. This would be 2½ per cent. In our Civil war the Union loss was 2¼ per cent., the Confederate loss was 4 per cent.

"In the case of all countries to date it may be stated that in numbers engaged or in numbers dead they have not yet approached the record of the Confederacy."

Since most of us have been hypnotized by the appalling aggregates of this war, it is well that we should be jolted somewhat by realizing at the outset that in proportion to population this present war is not producing any greater losses than did our Civil war. Europe is still a long way from being entirely depopulated. Much as we regret the loss of life that is being sustained, it is not in excess of the loss encountered in the wars that history records.

We urge our readers to not only read but re-read Dr. Zinke's article in this issue on "The Value of the Hospital in the Care of Confinement Cases." After doing so ponder over it; discuss it at your next meeting. The demand for better Obstetrics, the exhibition of greater professional skill is becoming more and more insistent and it behooves the profession not to ignore these expressed desires.

The importance of chronic foci in the etiology of systemic disease is becoming to be recognized more and more. Arthritis, cardio-vascular degeneration, chronic Bright's disease, toxemias, laryngitis, asthina and neuritis frequently, if not always, are due to some hidden force. The most frequent sites of focal infection may be divided into the following groups:

1. Recesses or Terminal Pockets; as the Meibonmian glands, lacrynial glands, nasal accessory sinuses and mastoid cells; tonsils and adenoids; salivary glands and ducts, gall-bladder and ducts, pancreas and ducts, Fallopian tubes; sweat and sebaceous glands.
2. Tubular structures or ducts; as the gastro-intestinal tract and tear ducts.
3. Glandular tissue; lymph glands, tonsils and ductless glands.
4. Serous membranes; as the pleura, synovial membrane and dura.
5. Pathologic tissues; as cavities of teeth, alveolar necrosis and death of pulp, infection about the nails and hair follicles and recession of the gums as pyorrhea.

It is extremely important that we recognize these foci when endeavoring to alleviate or remove their clinical manifestations.

Do it now. Read every advertisement and write to us if you don't see the desired article advertised.

New and Nonofficial Remedies, 1916 edition, published by the Council on Pharmacy and Chemistry of the American Medical Association is off the press and is deserving of acquiring by every member of the profession.

The profession as a whole does not as yet fully appreciate the character, the scope and above all the practical value of this book to the practicing physician. Perhaps it is because its size is so unpretentious, the price asked for it so small and the contents so conservative and unsensational in character that a hasty and superficial examination does not reveal its true worth.

Although it may be an old story to you, we wish to emphasize anew some of the important points in connection with this book? New and Nonofficial Remedies, in the first place, contains descriptions of the newer remedies that are worth the physician's consideration. Being issued by the Council on Pharmacy and Chemistry, which is composed of chemists, pharmacists, pharmacologists and clinicians of the highest standing, it is authoritative; in fact, it is recognized as the standard authority on the newer remedies. When besieged by too persistent detail men, many up-to-date physicians fortify themselves behind N. N. R.., taking the stand that they cannot afford to waste time on any preparation which has not gained admittance to its pages.

In the second place, N. N. R. furnishes the physician who has learned how to use it with the answers to a great many perplexing questions that arise in the course of daily practice—and in many instances it is the only book which does furnish this information. What is the distinction between the action of acetylsalicylic acid (aspirin) and that of the other salicylates? What is the comparative toxicity of the various cocain substitutes? What manufacturers furnish Bulgarian bacillus preparations—medicinal foods—organ extracts? What is the iodin strength of the nonofficial organic compounds of iodin compared with the official iodids? What is the standing of pneumococcus vaccine—of the Schick

test—of radium therapy? Look in N. N. R.; it is all there.

We believe that in owning and consulting this work the physician is doing justice to himself and his patients. To that end we urge that our readers send $1.00 to the American Medical Association, 535 N. Dearborn Ave., Chicago, Ill.

Correspondence

March 17, 1916.

Dr. F. C. Warnshuis, 91 Monroe avenue,
Grand Rapids, Michigan.

Dear Doctor:

At the suggestion of the Chairman of the Medical-Legal Committee, Dr. Tibbals, I am quoting you a statement of a case that I recently tried in Caro, Michigan, and which you may care to publish in *The Journal*, as it shows there are some honest attorneys in the state. It may be of interest to the legal profession to know that there are some lawyers in the State of Michigan honest enough to admit that a doctor has done his duty in the midst of a trial after becoming convinced by the evidence that such was the case. I refer to a case against a doctor in this state which was tried at Caro, Michigan, before Judge Beach two weeks ago, where the plaintiff was represented by the firm of Quinn & Wixon of that city, and the defendant by H. H. Smith of Caro, Michigan, and myself. The Declaration charged that the doctor was negligent in not properly diagnosing a fracture of the tibia and fibula; that is, the doctor stated to the patient that only the tibia was fractured. Negligence was also charged in not properly setting the limb and in consequent treatment.

The evidence disclosed the fact that the doctor had concluded after reducing the fracture under an anesthetic that only the tibia was fractured, but the evidence showed that the leg was properly set, that it was placed in a fracture box and that a weight was attached, which according to the medical testimony was the proper treatment for the fracture of both bones. The testimony further showed that the doctor gave the best of attention to the leg, but yet in spite of everything he could do the bones slipped and both the tibia and fibula at the present overlap and cause a shortening, although there seems to be a bony union at the present time, and the patient has very good use of the limb, although he claims there is considerable pain when he uses it.

During the trial of the case the Attorneys representing the plaintiff evidently discussed the case with doctors, consulted medical works and came to the conclusion that the treatment given by the doctor was correct and that the bad result was due to causes beyond his control, and after coming to this conclusion agreed to dismiss the case, and in doing so made the following statement in open court:

"May it please your honor and gentlemen of the jury. Counsel for the plaintiff now present, Mr. Clark, my brother Quinn and myself, until entering upon this trial, and until his morning, have had no opportunity to talk with the medical witnesses, who were expected to be called upon the part of the plaintiff. We have, however, during the few days this trial has been in progress, made some investigation, and this morning we have in attendance an expert surgeon, whom we summoned as a witness. Mr. Snow had looked after summoning the medical witnesses—and my opening statement was made in regard to the evidence as we expected to find it. On talking with our own expert this morning, and from our independent investigation of this case counsel has become satisfied that there was no negligence whatsoever on the part of Dr.———— in his treatment of this injury, and while the plaintiff suffers from an injury of the character I described in my opening statement, and, while our sympathy goes out to him very deeply because of his affliction, we want to make this statement to you in fairness and honesty; that we think that that overlapping of the bones that exists was not due in the slightest to any fault upon the part of the doctor; but is to be accounted for by the blind results of fortune and unreasoning chance alone. We wish to say further, that we absolutely exonerate Dr.———— from any charge of negligence in this case, whatsoever. We want to say to this jury, that counsel for the plaintiff, having arrived at that conclusion, feel that honor demands that they shall stand before you and make this statement in fairness and honesty and candor. As the facts, under the law, appeal to them as we now view them, we desire to dismiss this case and absolutely surrender, and we desire to say to you that Dr.———— is fully and completely exonerated in this matter, not only by counsel but by the plaintiff himself, who has learned the truth this morning for the first time.

Of course you understand that this case was brought in the best of good faith, there was no maliciousness back of it, or anything of that sort. We conceived it to be just as we stated it to you in the opening. We find that we were mistaken, and that the treatment he received, considering the peculiar character of the injury, was just what he ought to have received and the only thing that could be done for him under the circumstances.. I want to make that plain, for I don't want it to be understood that either the plaintiff or his counsel would urge a matter they did not think to be well-founded. We ask to dismiss this case, with the full exoneration of Dr.————."

To which the writer replied as follows:

If the Court please. I would like, if I may have the privilege, to express the appreciation which I feel, and that I know the doctor must, and that the medical profession will feel.

As Attorney for the State Medical Society to which Dr.———— belongs, I am only too glad to express my appreciation of the fairness with which Mr. Wixon has stated his position and the honor he shows in not going ahead with the case after becoming convinced that there was no negligence on the part of the doctor.

I wish also to thank Mr. Clark for his courtesy and fairness as I know he made some independent investigation to ascertain the true facts, and when he became convinced that injustice was being done he said so. Also I wish to thank Mr. Quinn and all

of them together. It is refreshing to come in contact with lawyers who are as honest as that; it makes you think more of your profession, when attorneys refuse to proceed to try to prove something where they feel an injustice may be done. I wish also to express my appreciation of the frankness of the witnesses. From their statement of the facts Plaintiff's attorneys became convinced the doctor did all that he could in this matter, and the result was something beyond his control. Justice has been done to all parties without the aid of Court or jury."

Court:—

"Gentlemen of the jury.. You have heard the statements of counsel in this—love feast. It is exceedingly gratifying to the court and it only bears out what the court has always held as to the attorneys of this bar—that they were conscientious, high-minded and able to determine for themselves, at the proper time, whether there was a case or not. I think the jury and the audience will go out of this court room convinced that the ordinary slurs against attorneys are not well-founded, that we have an honorable bar, who, when the time comes, and they are convinced, will say to you, they have no case.

"You are dismissed from further consideration of the case."

This only shows that if the physician will exercise such care as is required in the treatment of cases, even though bad results are obtained, that there are lawyers in this state honest and big enough to exonerate the doctor from blame and to further prove the point that I have always argued, that doctors instead of lawyers are the instigators of most of the malpractice cases.

Very truly yours,

Herbert V. Barbour.

Deaths

Dr. J. R. Williams, White Pigeon, died Feb. 17, 1916. Dr. Williams was one of the oldest and best known physicians and surgeons in this section of the country and has endeared himself to all who knew him both professionally and socially. He was County President of the Board of Health and Company Surgeon for the N. Y. C. Railroad.

Dr. J. J. Sweetland, of Constantine, was killed in an automobile accident March 8, 1916. Dr. Sweetland was instantly killed when returning from a professional call from an Elkhart Hospital when his car skidded and overturned pinning the doctor under the engine. His death was a great shock to this community where he was well known and respected by all.

(Constantine Special, March 8).

Last evening residents of this village were shocked when they learned of the death of Dr. J. J. Sweetland, who had been caught beneath his automobile when it skidded in the road and turned turtle about two miles this side of Mottville.

Dr. Sweetland had been in Elkhart where he had visited a patient at the Elkhart hospital and was returning. He was accompanied by Arthur Morrison of the firm of Morrison & Wood of Constantine. There is a bad turn of the road at the point where the accident occurred and when the car skidded it turned completely over, pinning both occupants beneath the engine.

Dr. Sweetland was probably almost instantly killed. Morrison retained sufficient presence of mind to reach up with a free arm and turn off the gasoline supply, avoiding the danger of an awful holocaust in addition to the tragedy already enacted.

Mr. Morrison was unable to extricate himself from the overturned car and continued his calls for help until finally they were heard at the home of M. Heimbach who lives nearby. Heimbach went to see what was the cause of the trouble and when he found the wreck was unable to release the imprisoned men alone. Dr. Partlow was called and came to the assistance of Mr. Heimbach, when Mr. Morrison was released from his perilous position under the machine. Sweetland was found dead the neck having been broken and death having been probably instantaneous. Morrison was badly bruised, but not seriously injured. The car, a Ford roadster, was a wreck. The accident happened on the south river road.

The remains of Dr. Sweetland were removed to his home in Constantine where Mr. Sweetland had been notified of the accident. The physician's only son, Dennis, was among those who went to the relief of the men under the the car,

This afternoon reports say that Mr. Morrison is badly hurt, but it is expected that he will soon be about. He is suffering from shock and exposure. The two men lay in the slush and snow for something over one and a half hours and the nervous strain undergone by Mr. Morrison when he did not know the fate of the doctor nor of the time he would be compelled to remain under the car, was terrible. The accident happened about six o'clock, and the call of Mr. Morrison was not heard until some time after seven o'clock.

Dr. Sweetland was probably one of the best known of the physicians of the county. He was a man of many good qualities and had surrounded himself with many friends. He has had a particularly large practice and his great heartedness was well known by the peope who loved him. His practice was large in the country and he had been in the habit of making many and long drives in following his profession.

Those who knew him best say that Dr. Sweetland was a man of great power and influence and possessed of a kindly sympathetic nature which served him well in the sick room. He has been a practicing physician in this community for about twenty-five years. He was formerly located at Mottville, but about ten years ago he removed to Constantine and since that time has been an active figure in the village life. He was a member of Three Rivers Lodge B. P. O. Elks. The funeral will be held Friday at 2 p. m.—Three Rivers Commercial.

State News Notes

Fifteen thousand visitors are expected during the sessions of the American Medical Association convention, which will be held June 12 to 15. Eight thousand registrations are expected and more than 400 doctors have asked for garage accommodations already.

Affiliated organizations that will meet there at the same time are: American Academy of Medicine, American Protologic Society, American Therapeutic Society, American Gastrologic Society and the American Association of Medical Editors, representing more than 200 periodicals. United States pensions examiners will meet there also and 400 exhibitors of medical books and supplies have applied for space.

Local physicians and surgeons in charge of the convention arrangements are: General committee, Louis J. Hirschman, Chairman; Thaddeus Walker, Treasurer; Ernest K. Cullen, Secretary. Special committees: Finance, Ernest W. Haas; entertainment, Arthur D. Holmes; registration, Frank B. Walker; printing and publication, James H. Dempster; halls and meeting places, Frank B. Tibbals; scientific exhibits, J. Walter Vaughan; commercial exhibits, John N. Bell; hotels, Robert Parmeter; automobiles, Angus McLean.

The convention proper will be preceded by "tuberculosis day" and "public health day." On Friday, June 9, a tuberculosis pageant will be followed by a public meeting, addressed by men who have national reputations as tuberculosis experts. In 200 pulpits of the city the theme will be "Cleanliness is next to Godliness," on Sunday, June 11, that being "public health day."

The convention program includes: Monday, receptions and banquets; Tuesday, alumni associations; Wednesday, reception by President of the Association; Thursday, Dr. and Mrs. H. N. Torrey will entertain at their Clairview estate, Grosse Pointe Farms; vaudeville performance and concert by local members of the profession; Friday, 1,000 delegates to Ann Arbor by special trains to be guests of the University of Michigan; other delegates to Mt. Clemens and on river and lake excursions.

No delegate wearing the official button of the convention will be allowed to walk, as every Detroit physician has placed his car at the disposal of the convention and fleets of motors will patrol the streets. Boy Scouts will act as guides .The feminine guests will be entertained by women's clubs.

The house of delegates, which transacts the business of the convention and elects the officers, will meet in the Wayne County Medical Society building, 33 High street, east. Scientific meetings, divided into 16 working sections will convene in various places.

Health officers and others interested in the activities of Boards of Health will secure much valuable information if they secure the annual report of the Department of Health of Jackson as compiled by Dr. C. G. Parnall, Health Officer of that city. The report redounds to the credit of Dr. Parnall and reveals his capability and efficiency as a health officer. Further, the report exemplifies what may be accomplished by an active local health organization. Jackson may well be proud of its Department of Health.

Health conditions will be linked with nearly every phase of the problems of charity and correction to be considered at the forty-third annual meeting of the National Conference of Charities and Correction at Indianapolis, Indiana, May 10 to 17. One section, that on health, will be devoted entirely to a discussion, by physicians, of the part the medical practitioner and surgeon may play in social work.

The Tri-County Medical Society is planning a Clinic Day at the Mercy Hospital to be followed by a banquet in the evening. The date selected will probably be the first week in April.

The proposition of establishing a physician's collection bureau in Battle Creek has been deemed impracticable by the Calhoun County Medical Society.

Dr. Henry Baird Favill of Chicago, Chairman of the Council on Public Health and Education of the A. M. A., died suddenly while visiting in Springfield, Mass.

Dr. Thomas J. Gruber, formerly assistant superintendent of the Lakeside Hospital, Cleveland, Ohio, has accepted the position of Assistant Superintendent at Harper Hospital.

President Rodman, of the American Medical Association died in his home in Philadelphia after a two days illness from pneumonia.

The Fifth Annual Meeting of Alienists and Neurologists of the United States will be held in Chicago, June 19 to 23, at the La Salle Hotel.

Dr. John Wenger, completing his interneship in the U. B. A. Hospital at Grand Rapids has located in Coopersville.

Governor Ferris has appointed Dr. Frank W. Shumway as a member of the State Pardon Board to succeed Dr. J. Brown, of Battle Creek.

The Amphidrome at Houghton has been secured for holding the several sessions of our annual meeting, August 15, 16 and 17.

Dr. Reuben Peterson of Ann Arbor was the essayist at the March 22 meeting of the Kent County Medical Society.

Dr. V. C. Vaughan, Sr. will deliver the dedicatory address of the new U. B. A. Hospital on April 1st.

Dr. Foreman, of Pullman, has removed to Three Rivers.

Dr. H. Reye, Pathologist at the Pontiac State Hospital, has resigned and will locate in Detroit.

Dr. L. E. Clarke, of Otsego, has moved to Detroit and opened an office at Highland Park.

Dr. A. H. Edwards has been appointed city physician for Grand Rapids.

Dr. and Mrs. W. T. Dodge, of Big Rapids, spent the month of March in Florida.

Dr. Carl Weller, of Ann Arbor, has been tendered the position of Pathologist at the Mayo Clinic.

Dr. C. H. Barber has been appointed city physician for Hastings.

Dr. C. V. High, Jr. has located in Cadillac.

Dr. B. H. McMullen, of Cadillac, spent three weeks traveling through the South.

Dr. H. W. Plaggemeyer has been elected a member of the Urological division of Harper Hospital.

Desirable openings for practicing physicians exist in Baldwin, Davisburg, and White Pigeon.

County Society News

BAY COUNTY

On February 28, Dr. B. D. Harison will be with us and read a paper on "Medical Education and State Regulation of Medical Colleges.

On March 13, Dr. Hewlett of the University of Michigan will be our guest. We will have a clinic in the afternoon at Mercy Hospital followed with a dinner at Elks Temple. Dr. Hewlett will be the speaker of the evening. Saginaw and Midland counties have been invited to attend.

We meet every two weeks and average about twenty-five members to a meeting.

Fred S. Baird, Secretary.

EATON COUNTY

Second regular meeting of the Eaton County Medical Society was held at Charlotte, March 30, 1916.

Morning Session—Held at Hospital, East Seminary street at 10 a. m.

Clinic,

Dr. W. H. Riley.

Afternoon Session—Held at the Court House, Supervisors' Room, second floor at 1:30 p. m. sharp.

SCIENTIFIC PROGRAM.

1. "Hysteria."
W. D. Newark, M.D., Charlotte.
2. "Syphilis of the Nervous System,"
W. H. Riley, M.D., Battle Creek

LENAWEE COUNTY

At the meeting of the Lenawee County Medical Society, on the 14th of December the following officers were elected for the ensuing year.

President—Dr. Geo. Lochner, Adrian.

Vice President—Dr. W. S. Mackenzie, Adrian.

Secretary-Treasurer—Dr. Leo Stafford, Adrian.

Member of Medica Legal Board—Dr. North of Tecumseh.

Representative of County to State Convention—Dr. Howland.

W. S. Mackenzie, Secretary.

ST. CLAIR COUNTY

The regular monthly meeting of the St. Clair County Medical Society was held at the Elks Club, February 24, 1916 at which time Dr. Eggleston of Battle Creek read a very interesting paper on Intestinal Stasis.

At the close of the meeting a vote of thanks was extended to Dr. Eggleston. A large attendance was present.

W. Ryerson, Secretary.

Book Reviews

CLINICAL STUDIES IN THE RELATIONSHIP OF INSANITY TO CRIME. By Paul E. Bowers, M.S., M.D., Formerly A. A. Surgeon United States Public Health Service; Formerly Junior Assistant Physician Government Hospital for the Insane, Washington, D. C.; Physician in Charge Indiana Hospital for Insane Criminals and Indiana State Prison Hospital. etc., etc. The Dispatch Print, Michigan City, Indiana.

In the "Preface" to these studies, the author declares that "every year society is unjustly sending to prison hundreds of insane and feeble minded persons who, in the course of their mental disturbances have violated the penal law" and makes a plea for the establishment of psychiatric clinics where the criminal may be studied in the light of "cold science." He finds that in the Indiana State Prison 60 per cent. of prisoners are mentally defective, of whom 12 per cent. are insane, 23 per cent. feeble minded, 8 per cent. epileptic, and 17 per cent. constitutionally inferior. Fifty per cent. of prisoners have defect of vision but considering the proportion of visually defective individuals among the populace

generally, this statement may or may not be of much significance. More significant is "an astonishing degree of sensory disturbances especially those of anesthesia," permitting "many minor surgical operations on convicts without general or local anesthesia." An interesting observation is made as to the predilection for tattooing. Tattoo marks are supposed to prevent blood poison and bring good luck. Why?

As an alienist would conjecture, Paranoia and Paranoid states furnish a "large quota of pathological crimes" but it is to be hoped for the credit of the legal and medical professions that the five patients admitted to the Indiana Hospital suffering from General Paresis had not previous to admission been convicted of crime.

A case of hysterical insanity of which conclusive details as to the disease are given, was electrocuted in the Indiana State Prison after parole (made against the physician's advice) and readmission—a striking example of miscarriage of justice.

Eight per cent. of prisoners in the Indiana State Prison are users of cocaine, morphine or other narcotic drugs.

The brochure is worth reading and if hypertrophy of sentiment has not obscured the author's judgment, his declaration that "a study covering more than ten thousand prisoners has led me to the belief that there is but a comparatively small number of criminals who deliberately, willfully and in a manner wholly responsible, practice crime," may well give pause to the sociologist. After he has taken time for catching his breath, the inquiry would be pertinent. "What is to be done about it?"

C. B. BURR.

DIAGNOSTIC METHODS: A guide for History Taking, Making of Routine Physical Examinations and the Usual Laboratory Tests for Students in Clinical Pathology, Hospital Internes, and Practicing Physicians. By Herbert Thomas Brooks, A.B., M.D., Memphis, Tenn. Third edition; Cloth, Price $1.00. C. V. Mosby Company, St. Louis, Mo.

A handy useful volume.

CANDY MEDICATION. Bernard Fantus, M.D., Professor of Pharmacology and Therapeutics, University Illinois. Cloth, 82 pages. Price $1.00. C. V. Mosby Co., St. Louis, Mo.

A practical presentation of methods to cover and make pleasant disagreeable remedies.

INFANT FEEDING. Lawrence T. Royster, M.D., Cloth, 14 pages. Price $1.25. C. V. Mosby Co., St. Louis, Mo.

A useful manual that will be of material assistance to every general practitioner seeking to meet the problems of infant feeding that arise in his general practice.

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Miscellany

DO YOU KNOW THAT

Four per cent. of the inhabitants of certain sections of the South have malaria?

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The careless sneezer is the great grip spreader?

Open air is the best spring tonic?

Typhoid fever is a disease peculiar to man?

Measles kills over 11,000 American children annually?

There has not been a single case of yellow fever in the United States since 1905?

There is no Federal institution in the continental United States for the reception and care of lepers?

Plague is a disease of rodents?

Malaria is spread by a special mosquito?

House screening is a good disease preventive?

Fingers, flies and food spread typhoid fever?

Pellagra may be prevented or cured by proper diet?

The United States Public Health Service believes that the common towel spreads trachoma, a disease of the eyes?

Children from sanitary homes advance more rapidly in school than those from dirty premises?

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Original Articles

SCLERAL TREPHINE OPERATION FOR DETACHMENT OF THE RETINA. RESULTS OBTAINED IN TWELVE PATIENTS.

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I shall first give the history of an unpublished case of detachment of the retina treated by trephining the sclera associated with incision in the choroid and retina and follow with a summary of results obtained in sixteen operations.

History.—The patient, S. P. female, aged 80 presented herself for examination in the Ophthalmic Clinic of the University of Michigan March 30, 1915, complaining of gradual loss of vision in the left eye for a period of one year. Family and personal history were negative.

Examination.—Vision, right eye, 6/20; left eye, objects. Tension normal in both eyes. Pupillary reflexes active to direct stimulation in right eye, and to consensual in the left eye; sluggish to direct in the left eye, and consensual in the right. Accommodative reflexes normal in both eyes. Transillumination negative.

Opthalmoscopic Examination.—Right eye beginning nuclear cataract. Many stringy vitreous opacities. By direct examination all the details of the fundus blurred. There is a large physiological excavation, lamina cribosa seen. Surrounding the disk is a whitish gray area which broadens nasally into a cresent nearly a disk diameter wide in its broadest dimension. The blood vessels are somewhat tortuous, the arteries reduced in caliber. Moderate amount of arterial-venous compression.

Left Eye.—The lens is finely granular throughout with several well defined opacities grouped about the posterior pole. There are numerous stringy floating opacities in the vitreous. The disk edges are blurred, large central physiological cup present. Both veins and arteries are small. The retina is detached in two lobes, one nasally limited by a line running from two to six, the other temporarily limited by a line from eleven to six. The two lobes coming in contact at a point two and one-half diameters below the disk margin. The whole detached area is grayish in color and fluctuates on movement of the globe. The mascular region could not be recognized.

Field (Fig. 1) shows almost entire absence of the upper and nasal fields.

Diagnosis.—Partial detachment of retina of unknown origin.

Treatment.—April 22, 1915. Trephine operation for detachment of the retina performed under local anesthesia. The conjunctival and sub-conjunctival tissues were incised down and out and the sclera bared at a point about 8 millimeters from the limbus. A two millimeter button was removed with a Von Hepple's trephine and the choroid and retina incised with a cataract knife. The incision in the choroid was followed by a free discharge of straw-colored fluid estimated at 20 millimeters in quantity. This was followed by a small amount of semi-fluid vitreous. The wound was closed with three stitches.

May 3, 1915. Eleven days after operation. Vision 4/60; tension 22 millimeters.

Vision Fields (Fig. 2) shows some restriction below, but marked improvement nasally.

Ophthalmoscopic Examination.—The lenticular and vitreous opacities same as before operation. The whole retina is edematous and thickened. The wavy appearance has disappeared and the entire fundus is normal in color. The only evidence of a detachment is seen in the periphery below.

July 28, 1915. Three months later. Vision 1/60; tension normal. Lens is more granular with flake-like corticle opacities. The retina is detached below from midway between the disk and the aura-serata, the detached portion being somewhat triangular in shape with base extending from 5 to 8.

While the result shows a marked improvement over the original condition, it is not so good as it was eleven days after the operation.

TECHNIC.

The technic of the operation may be described as follows:

The conjunctiva and underlying tissues are grasped with a pair of forceps at a point corresponding as nearly as possible to the lowest portion of the detached retina and by a single cut with a pair of straight scissors a triangular incision is made down to the sclera. Before losing the grip with the forceps a suture is passed through the apex of the triangular flap. This procedure not only enables the operator to include in the suture all the tissues incised, but affords a ready means of retraction. The

suture can be held by an assistant, or a pair of artery forceps can be applied and so placed that the proper pull will be exerted to give a good view of the field of operation. After the sclera has been bared a 2 millimeters trephine opening is made and the choroid or choroid and retina incised with a cataract knife in such a manner as to avoid injuring the large vessels.

The free escape of subretinal fluid may be followed by a few drops of vitreous. The needle on the suture previously passed through the apex of the flap is now passed through the subconjunctival tissues and the conjunctiva and the wound closed. A single suture on each side completes the operation. The after treatment consists of rest in bed for a period of ten days in such a position as to favor the replacement of the retina.

Fig. 1.

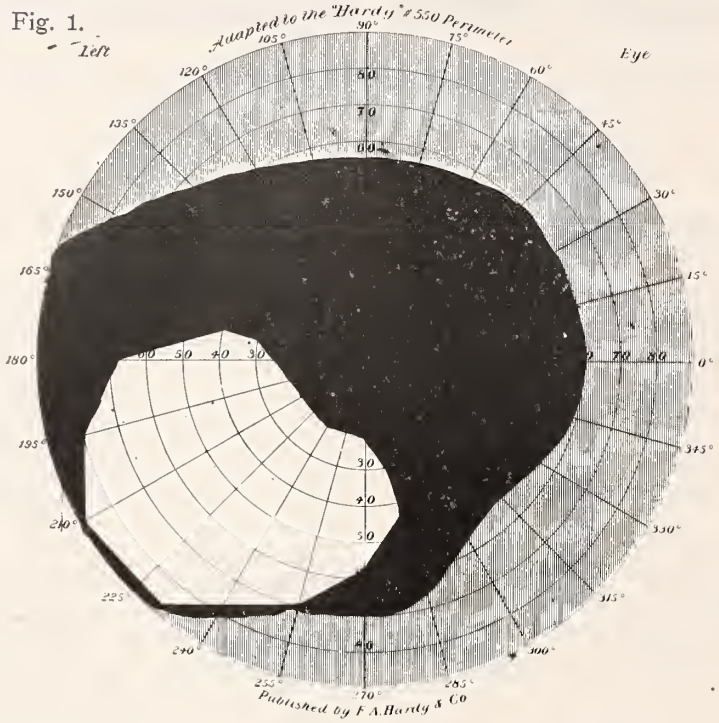


Fig. 2.

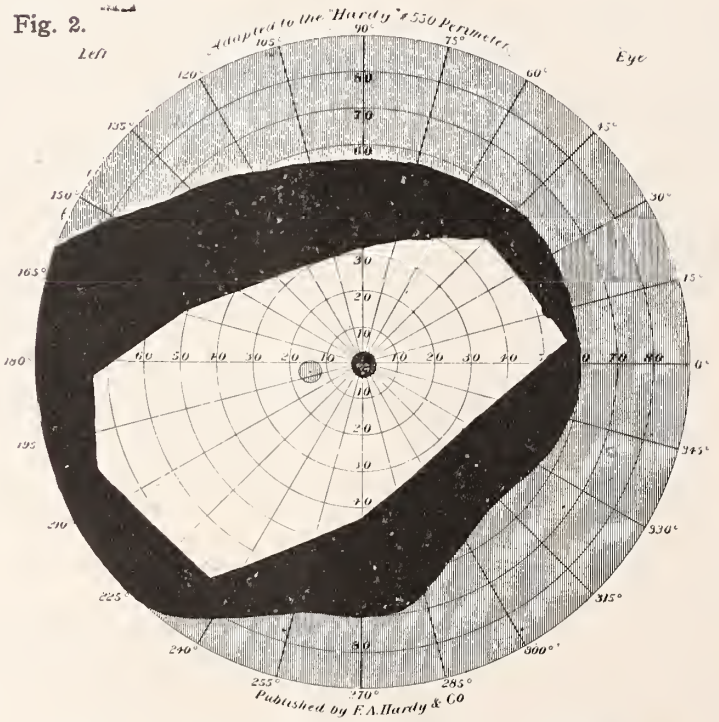


Fig. 1. Field before operation April 22, 1915. Vision—objects.
Fig. 2. Field after operation. May 3, 1915. Vision 4/60.

SUMMARY OF RESULTS.

Total number of cases 12
Total number of operations..... 16

Two cases were trephined twice ond one three times.

VISION.

Improved	Unimproved	Made Worse
5	5	2

FIELD.

Improved	Made Worse
9	3

Eleven cases, the fields of which I show, were reported at the last meeting of the American Medical Association held in San Francisco.

In three cases very good results were obtained. In the two cases in which the vision was made worse, one had fluid vitreous a portion of which was lost during an operation for cataract extraction, the other was a case of high myopia. The field was made worse in three cases. In one the detachment was very extensive and the choroid was not incised. In another there were present contraction bands in the retina, the choroid was detached, and the patient had a four-plus Wassermann with total detachment of the other eye. The third was a case of high myopia.

In conclusion I quote from my last paper on this subject.

"The object of this operative procedure has been to secure an opening in the sclera and choroid which will allow free drainage of the subretinal fluid of a sufficient length of time to permit the retina to become reattached. If the secretory process is dormant, and all the subretinal fluid evacuated at the time of operation, reattachment may occur without edema of the conjunctiva. But if the secretory process is active, or if any amount of the subretinal fluid is left behind, a certain amount of edema must necessarily follow or the retina will again be separated from the choroid and failure result. In each of the cases in which a good result was obtained, the operation was followed by a marked edema which did not entirely disappear until the tenth day.

The procedure seems to be unattended by any danger, either of impairing the integrity of the globe, or in uncomplicated cases, of increasing the extent of the detachment. On theoretical grounds at least, it would seem desirable to drain off the subretinal fluid without injuring the retina. In the cases reported, however, the best results were obtained when the escape of the subretinal fluid was followed by a discharge of a small amount of vitreous.

CASE REPORTS.

Case 1. Operated May 19, 1913. Uncomplicated detachment of the retina of one year duration. Vision 1. p. Choroid not incised. Result, failure.

Case 2. Operated July 3, 1913. Detachment, of unknown origin, eight months duration. Vision 2/60. Many vitreous opacities. Choroid not incised. Result, field improved, vision same.

Case 3. Operated Sept. 23, 1913. Detachment in case of neuro-retinitis, of one year duration. Vision 4/60. Choroid and retina incised. Result, March 29, 1915. Retina restored, vision 6/7.5.

Case 4. Operated October 28, 1913. Detachment following loss of vitreous at time of cataract extraction one year previously. Vision 1. p. Choroid and retina incised. Result May 29, 1914. Field improved, vision 1/120.

Case 5. Operated December 4, 1913. Detachment, nine months duration. Vitreous opacities, proliferating retinitis. Result December 22, 1913. Field improved. Vision same, due to proliferating retinitis.

Case 5. Operated December 12, 1913. Aged 36. Retina and choroid detached. Struck in eye when aged 12. First noticed loss of vision four years ago. Field improved. Vision same.

Case 7. Operated May 14, 1914. Traumatic detachment three years duration. Large and small vitreous opacities. Result June 11, 1914, field improved from candle Fig. 1 to 10 millimeters, object Fig. 2. Vision from 1. p. to fingers.

Note. Unfavorable case.

Case 8. O. D. Operated May 19, 1914. Total detachment o. s. Detachment o. d. one year duration, also choroid. Vitreous degenerated. Cyclitic cataract. Wassermann ++++. Trephined twice. Result, failure.

Note. Very unfavorable case.

Case 9. Operated May 22, 1914. Aged 14. Struck in eye with fragment of cap three years previously. X-ray showed pressure of foreign body back of globe. Organdized bands in vitreous. Retina and choroid detached. Result, failure. Operated three times.

Note. Very unfavorable case.

Case 11. Operated May 20, 1914. Detachment of twenty-nine days duration. High myopia—13.00. Result, failure.

PUERPERAL ECLAMPSIA: ITS TREATMENT BY COMBINING VENESECTION WITH STROGANOFF'S NARCOSIS.*

George Kamperman, M.D.

WITH A CASE REPORT.

Clayton C. Benjamin, M.D.

DETROIT, MICH.

Puerperal eclampsia has long been known as the "disease of theories." We must confess that this is still true. Although we think we have learned a great deal about this disease, yet we have not solved its mysteries to any great extent. A great deal of effort has been directed towards investigating its etiology. Maternal, fetal, and placental origins have been claimed by various workers. But on nothing have they been able to agree. Probably the majority of workers are now inclined to consider the condition as being the result of an autointoxication, due probably to some disturbance of metabolism. Williams thus sums up the various ideas concerning its etiology. But even that is not saying a great deal, and we must agree with Lichtenstein that as yet we know nothing definite concerning its etiology.

In the discussion of this subject it will not be considered within the limits of this paper to discuss the entire subject of eclampsia. Rather we would limit ourselves to a consideration of eclampsia as treated in the Zweifel clinic in Leipzig. Only such phases of etiology as may be necessary to explain certain views held will be included in the discussion. The essayists wish to disclaim at the beginning any originality as to the ideas expressed. Furthermore, we are not here to champion their methods, but simply to relate their experience and results.

The treatment of eclampsia has been the subject of a great deal of discussion. The methods of treatment advocated have been numerous, and many statistics have been compiled to show the advantages of some given method. The advocates of both active and expectant treatment have vied with one another to reduce the mortality accompanying this disease. The advocates of active treatment have resorted to various operative procedures to deliver their eclamptic patients. The trend among these has been from slower methods to quicker deliveries, and procedures more surgical in nature. Everywhere we see experienced men trying various methods only to discard them for something different. Men who have tried expectant treatment will perhaps discard their methods and try some form of active treatment. There are others who have tried active treatment and have discontinued this for some form of expectant treatment. In many instances we see obstetricians, after trying several procedures, go back and revive some older and discarded method. In general, the modern trend in this country is toward active treatment, and especially toward the more rapid methods of delivery, while in Europe the trend seems to be from the various active measures towards the expectant and more conservative methods. In this country we hear very little of any treatment except the active treatment. It is the purpose of this paper to present the other view. It may be considered by some rank heresy to suggest expectant treatment for eclampsia. But it surely cannot be wrong to stop for a moment to consider what the other men are doing. In discussing a subject about which so little is definitely known we must not be too positive that our views are correct and that the opposite views are entirely wrong. The writers have been trained to treat eclampsia by active measures and can claim no great experience with other methods. What will be presented has been gained mostly by personal observation of the methods used and a short visit with men advocating these measures, and from a study of Lichtenstein's report of the cases in the Zweifel clinic.

Lichtenstein has pointed out what he considers a fallacy in our reasoning about eclampsia. We like to direct our treatment of any diseases against its cause, if this be possible. When we have gained more or less satisfactory results with empiric treatment, we are quite inclined to look back and deduct ideas as to etiology from our treatment and its results. In this way Lichtenstein concludes that we have been led into false ideas as to the etiology of eclampsia. Dührssen in 1892 had observed that with rapid delivery one could save more mothers than with expectant treatment as it had been used. Because of this observation rapid delivery, and also early delivery, became the accepted method of treatment of eclampsia. From the improved results thus obtained it was at once deduced that eclampsia was of either fetal or placental origin, since the removal of the fetus and placenta was in many cases followed by a cessation of the convulsions. This was not only a plausible theory, but it had practical clinical evidence to support it.

*Read at the Forty-ninth Annual Meeting of the Michigan State Medical Society, held at Lansing, Michigan, September 10-11, 1914.

At this stage von Winkel announced his ideas concerning the effect of fetal death on eclampsia. He was of the opinion that fetal death exerted a favorable influence on the subsequent course of an eclampsia. If the fetus died during the course of the disease, it was thought to be a material factor in aiding the recovery. This supported fully the deductions made from their experience with operative delivery concerning the fetal and perhaps the placental origin of eclampsia.

Von Winkel's idea was allowed to stand without question for several years, but was finally challenged by several observers, principally by Lamsbach and Lichtenstein. These observers, after carefully collecting all published cases failed to find any support for von Winkel's contention. On the contrary they found many more cases where convulsions began after fetal death than where fetal death caused a favorable effect on the disease.

Whatever we believe as to the role the fetus plays in causing eclampsia must necessarily affect our ideas as to the treatment of this disease. As was stated by Peterson a year ago at this meeting there can be no doubt that pregnancy is in some way related to eclampsia, for we never see eclampsia in a non-pregnant woman. But just how this influence is exerted is unknown. A great deal of skepticism has developed as to whether the toxin is actually developed or elaborated by the fetus. There are on record numerous cases of "intercurrent eclampsia" where the patient recovers from the eclampsia and later on is delivered normally, the delivery at times occurring a couple of weeks after the recovery from the eclampsia. From such cases it has been judged that the fetus and placenta are not essentially the cause of eclampsia. Furthermore many patients have convulsions after the delivery of the fetus, and a rather large number even develop convulsions some time after the fetus has been born. The explanation usually given for these cases is that the mother was so profoundly toxic before delivery that the convulsions continued or developed in spite of the delivery. But this does not explain why the convulsion should be delayed for twelve or even more hours. There are also on record cases where eclampsia has developed in the absence of the fetus—in cases of complete hydatidiform mole. Here one could hardly ascribe a fetal origin.

Lichtenstein believes certain errors have crept into our statistics for active treatment of eclampsia, which tend to give undue credit to the delivery as a curative measure. Cases of postpartum eclampsia are not included with early deliveries, and the high mortality of postpartum eclampsia is thus subtracted from the mortality following early delivery. According to his findings postpartum eclampsia has a decidedly higher mortality than is usually ascribed to it. His contention is that these cases should be included with those delivered early. Then again early delivery is credited with the cure of certain cases which were practically cured before delivery (cases of "intercurrent eclampsia.") Also cases in which convulsions continued after delivery until venesection was resorted to, have been considered as cured by the delivery. It is claimed that in this way the good results of delivery have been overestimated.

A great deal of work has been done to estimate the amount of blood lost by a patient during her delivery. All labors are naturally not attended by the same amount of bleeding. Lichtenstein in a series of 320 cases found a variation of from 100 to 1800 cubic centimeters. The amount of blood lost during an operative delivery was much greater on an average than that lost during spontaneous delivery. Among the spontaneous births only two of the series of 320 cases lost more than 300 cubic centimeters, while three-fourths of all the operated patients lost more than that amount. It is also noted that patients with postpartum eclampsia had in most cases lost very little blood during the preceding delivery. Furthermore, it was observed that these patients had in most cases had a spontaneous delivery.

Ahlfeld found the average loss of blood during delivery to be about 400 cubic centimeters, Glockner found it to be about 350 cubic centimeters, while Lichtenstein in his series of eclamptics estimated it to be 490 cubic centimeters. The amount of blood lost in any series will be influenced by the number of operative deliveries. For the sake of comparison Lichtenstein takes 400 cubic centimeters as an average and finds that of the spontaneous deliveries only 4 per cent. lost this amount of blood, while 52 per cent. of the operated cases lost at least 400 cubic centimeters.

The question arises whether the good results obtained by operative methods were due to the actual emptying of the uterus or whether the improvement observed might not in large measure be due to the increased loss of blood.

In Lichtenstein's series of 400 cases of eclampsia, 40 per cent. had no convulsions after delivery, while 60 per cent. still continued in their convulsive attacks. If delivery is so essen-

tial, why is it, he asks, that more than half of the patients continue in convulsions?

Aside from the cases of eclampsia recovering without delivery (intercurrent eclampsia), Lichtenstein's series shows a large number of cases in which convulsions ceased considerable time before delivery. This raises the query as to whether the emptying of the uterus is essential to the successful treatment of eclampsia. Lichtenstein is very skeptical as to whether there is as great an advantage in early delivery as the statistics seem to indicate. He considers that cases of postpartum eclampsia should be included among the early delivered, as the delivery occurred even before the convulsions began. He asserts that if emptying the uterus had such a favorable influence on eclampsia one would expect that postpartum eclampsia would not occur.

In Lichtenstein's report the relation of the amount of blood lost to the cessation of convulsions is reported in 315 cases. In 121 of these cases convulsions ceased after delivery, and in 194 they continued. Among the latter were thirty-nine cases of postpartum eclampsia. The loss of blood is tabulated as follows:

Loss of blood in eclamptic patients:

	Loss of blood	Per patient
Cessation of convulsions (121)	75,960 c.c.	620 c.c.
Continuation of convulsions (155) (Exclusive p.p. eclampsia)	73,140 c.c.	470 c.c.
Continuation of convulsions (194) (Inclusive p.p. eclampsia)	79,400 c.c.	410 c.c.

The total loss of blood in thirty-three postpartum eclamptics was 6,260 cubic centimeters, or 160 cubic centimeters per patient. The total loss of blood of all cases regardless of cessation of convulsions was 155,360 cubic centimeters, or 490 cubic centimeters per patient. In comparing the groups it is evident that the average loss of blood in all cases where convulsions ceased, is larger than in any other group, and 130 cubic centimeters more than the average loss of blood in the entire series. Also in cases where convulsions ceased each patient had lost 50 per cent. more blood than those in whom convulsions did not cease (620 c. c.—410 c. c.) Every patient in whom there was a cessation of convulsions had lost about four times as much blood as the patients with postpartum eclampsia.

At the Leipzig clinic various methods of treatment had been used. Expectant and conservative treatment in the way of aiding elimination had been tried and discarded in 1895 in favor of operative methods. A lessening of the mortality was at once observed, the mortality dropping from 32 to 15 per cent. Zweifel was not yet convinced that this favorable result was due to the removal of the fetus. It did not explain satisfactorily the occurrence of postpartum eclampsia. Von Winkel had had good results with the use of narcotics and diaphoretics, and more recently Stroganoff had obtained such good results with the use of narcotics alone. These and other considerations led to the conclusion that although with operative delivery the mortality had been reduced, yet the delivery itself was not the essential part of the treatment and the good results could not be ascribed to this alone. They were of the opinion that the excessive loss of blood had been a more important factor in reducing the mortality than the actual emptying of the uterus.

In April 1911, Lichtenstein, with the consent of Professor Zweifel, resolved to discontinue active methods in favor of expectant obstetrical treatment in the treatment of eclampsia. The results obtained in several hundred cases have since been published.

The treatment adopted is a combination of the old time venesection and a modified Stroganoff's narcosis. After the admission of the patient into the hospital a rapid but careful examination is made, including temperature and pulse observation, lung examination, urine analysis, and blood pressure determination. The patient is given an enema and venesection is immediately performed, 500 cubic centimeters of blood being the quantity removed, usually from the median basilic vein. Following this the sedative treatment as used by Stroganoff is at once begun and consists of the use of morphine subcutaneously and chloral hydrate per rectum. The morphine is given in one-quarter grain doses, and the chloral hydrate in thirty grain doses. The intervals can be determined from the following scheme:

Sedative Treatment (Stroganoff).

(a) Morphine Sulphate	¼ gr.
(b) One hour after (a), Chloral hydrate,	30 grs.
(c) Three hours after (a) Morphine Sulphate,	¼ gr.
(d) Seven hours after (a) Chloral hydrate,	30 grs.
(e) Thirteen hours after (a), Chloral hydrate,	22 grs.
(f) Twenty-one hrs. after (a), Chloral hydrate,	22 grs.

One will observe that the interval between the various doses is always two hours longer than the interval before the preceding dose. The morphine is given hypodermatically and the chloral hydrate is dissolved in 300 cubic centimeters of milk or salt solution and given per rectum. Sweating is not resorted to. If there is an obstetrical indication for delivery

this is done at once, but otherwise a waiting policy is adopted. The convulsions are not considered an indication for delivery. The patient is never delivered if the cervix is not dilated. In case of vomiting or continued convulsions, gastric lavage is performed through a nasal catheter, and after the lavage a liter of acid solution (lemonade) is left in the stomach. Subcutaneously a solution containing ½ per cent. of sodium bicarbonate and ½ per cent. sodium chloride is given in severe cases; or Ringer's solution (NaCl .6%, KCl .4%, CaCl-2 .26%, NaHCO-3 .03%) is given intravenously in amounts of 500 cubic centimeters. The patient is catheterized frequently and a qualitative and quantitative analysis is made of each sample. If convulsions continue a second venesection of 350 cubic centimeters and a third of 250 cubic centimeters is made. In case anesthesia is required, ether and not chloroform is used. To protect the patient from all external stimuli the room is darkened and the patient's ears are plugged with cotton.

During the first year and a half (April 1911, November 1912) eighty-two cases of eclampsia were treated. Of these eighty-two mothers five died, a mortality of 6.09 per cent. One death was due to peritonitis following an attempt at forceps before admission to the clinic. Two deaths followed pneumonia. At the time of the report sixty-two patients had been treated consecutively without a maternal death.

The eighty-two mothers gave birth to sixty-three children. Of these 13 died, a fetal mortality of 20.6 per cent. If we consider all fetal deaths regardless of cause, and do not deduct those not viable, we find thirty-two fetal deaths following eighty-two deliveries, a mortality of 39.9 per cent. (This allows one fetus for each delivery. The number of multiple pregnancies cannot be definitely determined from the report. Counting twins would lower the percentage of mortality).

Rather interesting is the occurrence of "intercurrent eclampsia." In some cases the patients recover entirely from the eclampsia and do not go into labor at time. Later on they have their confinement normally. This is what Lichtenstein has termed "intercurrent eclampsia." The eclampsia occurs during the pregnancy and runs its course like an intercurrent disease. In some cases the interval between the last eclamptic attack and the occurrence has been a couple of weeks—nineteen days in one case. The lower limit is set arbitrarily—if twelve hours elapse between the last convulsion and the birth of the child it is classed as intercurrent. With this method of treatment about half (47 per cent.) of the patients recover from the convulsions before the birth of the child. Lichtenstein asserts that the cure of these would have been credited to the delivery if active treatment had been employed and thus undue credit would have been given to the delivery. The occurrence of intercurrent eclampsia convinces him that delivery is not essential in the treatment of eclampsia. In the series of thirty-two cases of intercurrent eclampsia there were nineteen living children, the fetal mortality here being 40 per cent.

In nearly all cases treated the urine showed evidence of improvement very early during the course of treatment. The decrease in the amount of albumen was usually rapid and in several cases the urine was albumen free at the time of the delivery. It is advised that a qualitative and quantitative analysis be made of each specimen in order to judge as to the course of the disease, and it is considered that frequent urine analyses are as important here as temperature observations are in the course of an infectious disease. The improvement as shown in the urine usually occurs so early that Lichtenstein considers it due to the venesection rather than to the sedative used.

The return to consciousness usually comes gradually and many patients recover complete consciousness before the birth of the child.

The effect on the further occurrence of convulsions was such that 58.8 per cent. of the series had no more convulsions after the treatment was instituted.

Because of the expectant obstetrical treatment, spontaneous deliveries are common, 66.3 per cent. of the patients having normal spontaneous confinements. It is pointed out as an advantage in that these cases can be treated conservatively from the obstetrical standpoint.

The figures given thus far are those obtained in the Zweifel clinic in Leipzig. A series of cases treated by non active measures has also been collected from various sources. The entire series amounts to 329 cases with forty deaths—mortality of 12.16 per cent. A large number of these cases were not treated by a combination of venesection and Stroganoff's method, but by either one of these methods alone. By combining the two methods it is thought that the results will be an improvement over those obtained by either method alone. It is thought that the benefit derived from venesection is due to

its lowering the blood pressure and to the removal of toxic matters.

CASE REPORTS.

The patient Mrs. L. M., aged 26 years, Polish, Para. V, was seized with a convulsion at 2 a. m., June 6, 1914. Just prior to the convulsion she had complained of severe epigastric pain. Following the convulsion she remained unconscious. When first seen at 4 a. m. she was having the fifth convulsion. No physician had been consulted during the pregnancy. A catheterized sample of urine was obtained and on boiling it turned solid. A quarter grain of morphine sulphate was given hypodermatically and after consultation the patient was removed to the Solvey General Hospital.

Examination showed a very fleshy patient, stout build, with marked general edema. She was in deep coma. Heart examination was negative. Pulse rate was 70, respiration 22, temperature 100 per axilla. Lung examination showed numerous noisy rales. Blood pressure was 130 millimeters. (Mercer.) The urine besides heavy albumen showed numerous casts in the uncentrifuged specimens. The patient was eight months pregnant. There were no labor pains. Fetus lay in O. L. A. position. Fetal heart rate was 150. When admitted into the hospital she had had at least six convulsions.

The treatment instituted was a combination of venesection and Stroganoff's narcosis. Five hundred cubic centimeters of blood was taken from the left median basilic vein. Following this morphine sulphate in quarter grain doses hypodermatically and chloral hydrate in thirty grain doses per rectum was given according to Stroganoff's method. Her ears were stopped with cotton to prevent external stimuli and the room was darkened and kept quiet. The blood pressure dropped to 110 millimeters. (Mercer.)

After instituting this treatment there were no more convulsions. Eight hours later she had recovered sufficiently from the coma to be able to swallow calomel tablets, and she began to take a considerable amount of fluid. After twenty-four hours she had recovered complete consciousness. She complained of intense headache. The fetal heart was plainly heard, rate 150. The edema had diminished to a considerable extent. The urine which was scant during the first twelve hours after beginning treatment, increased in amount very rapidly after the first twelve hours.

On the second day the blood pressure went up to 140 millimeters. It remained at that point until labor, during which it went as high as 160 millimeters. Following the labor it again dropped to 140 millimeters, and then gradually went down.

The urine which boiled solid on admission to the hospital, cleared up rapidly and at the end of twenty-four hours contained about one-third volume of albumen, and hyaline and granular casts. Five days later, at the time of confinment, the urine contained only a faint trace of albumen and very few casts.

Two days after beginning treament the fetal heart, which prior to this had been very distinct, was no longer heard, and the patient complained of lack of fetal movements.

Labor occurred five days after her admission into the hospital. During these five days there were no convulsions and the patient improved in all respects every day. After six hours of labor pains she was delivered spontaneously. The fetus was still-born and of about eight months development.

The post partum convalescence was uneventful. The patient left the hospital on the eleventh day, and at this time the urine was free from albumen and casts. She was seen September 1, 1914, and was in good health.

In the preparation of this paper we wish to acknowledge having consulted very freely the writings of Lichtenstein on this subject.

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OBESITY: ITS RELATED PATHOLOGY.*

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Popular prejudice presumes that the taking on of fat is an indication of health. Rounded contour is more agreeable to the eye than angularity. People with increasing adiposis, therefore, usually are discouraged by friends and relatives from making any effort toward reduction. Physicians are to some extent responsible for this attitude. Not being interested, except in rare instances, they have not considered obesity work a specialty worthy of their attention, and have left the treatment largely in the hands of charlatans and quacks, contenting themselves with general directions concerning food and exercise, and, furthermore, like the laity, have not been sufficiently discriminating, when results were bad, to recognize that the method of reduction, not reduction itself, was wrong, and too often in their own thought have placed undue emphasis upon the cosmetic aspects of obesity rather than upon its relation to health.

The taking on of fat in excess is an indication of failing function, if not of actual disease process. Allow me to quote from one of the health letters issued by the Life Extension Institute in the interests of health and longevity.

"To Our Subscribers:

How many people, after the age of 35, have a conformation of body that is in accord with proper ideals of health and symmetry? The average individual, as age progresses, gains weight until he reaches old age, when the weight decreases.

*Read before the Menominee County Medical Society, Feb., 1916.

This movement of weight is so universal that it has been accepted as normal or physiological, whereas it is not normal and is the result of disease producing influences.

The standards for weight at various ages and heights have been established by life insurance experience, but these standards which show an increase in weight as age advances by no means reflect the standard of health and efficiency. They merely indicate the average condition of people accepted for life insurance, whose death rate, while covered by life premiums, is yet far above that obtaining among the people of the best physical type.

With most people the increase of weight is an index of waning physical activity causing a physical deterioration, which is masked by our custom of wearing clothes. The average individual at the age of 40, when time alone cannot be responsible for such physical change, is indeed a pitiable contrast with the average individual of 25. Already there is a sagging of the figure, there are fatty accumulations and a 'corporation' is usually a permanent and growing bodily institution.

Now, why should we slavishly settle down to accept these bodily disfigurements and burdens, and the handicaps that accompany them? Why not try for the best condition instead of being content with the common lot."

Further on in the letter attention is called to the fact that it is only within recent years that the significance of overweight has been appreciated, and a table is given based on the experience of forty-three American Life Insurance Companies.

AGE THIRTY.

Women		Men	
5 ft.	120 lbs.	5 ft. 3	133 lbs.
5-1	122 lbs.	5-4	136 lbs.
5-2	124 lbs.	5-5	140 lbs.
5-3	127 lbs.	5-6	144 lbs.
5-4	131 lbs.	5-7	148 lbs.
5-5	134 lbs.	5-8	152 lbs.
5-6	138 lbs.	5-9	156 lbs.
5-7	142 lbs.	5-10	161 lbs.
5-8	146 lbs.	5-11	166 lbs.
5-9	150 lbs.	6 ft.	172 lbs.
5-10	154 lbs.	6-1	178 lbs.
		6-2	184 lbs.
		6-3	190 lbs.
		6-4	196 lbs.

These tables form the working data concerning overweight risks for every one of our safe insurance companies, and are based on a careful study of the records of the forty-three leading insurance companies of America as reported by the Medico-Acturial Committee.

The following is an exact quotation from the printed instructions of one of our most reliable insurance companies to its agents, and accurately reflects the attitude of all.

"The applicant who is of good weight possesses in the mind of the agent an additional value as an insurance risk, and it is true that the average overweight gives the appearance, if anything, of being better than the average weight risk. Despite appearance, it has been conclusively demonstrated that the overweight is not as good as the average weight risk, therefore, overweight cases should be most carefully investigated before submitting final applications. No definite rule can be given relative to the question of overweight, for it involves many factors. Age possesses a very great value by reason of the fact that after 45 overweight risks are decidedly poor."

TABLE OF OVERWEIGHTS SHOWING VARIATIONS IN DEATH RATE FROM STANDARD

Ages	+5 to +10 lbs.		+15 to +20 lbs.		+25 to +45 lbs.		+50 to +80 lbs.	
	Death Rate Below Standard	D. R. Above Stand.	D. R. Below Stand.	D. R. Above Stand.	D. R. Below Stand.	D. R. Above Stand.	D. R. Below Stand.	D. R. Above Stand.
20 - 24	4%		4%			1%		3%
25 - 29	7		10			12		17
30 - 34	1		14			19		34
35 - 39	0			1%		31		55
40 - 44	0			10		40		75
45 - 49		3½%		9		31		51
50 - 56		2		21		24		49
57 - 62		2		25		12		38

"From these figures it is plain," the same authority observes, "that the usual gain in weight with advancing years is not an advantage, but a handicap. Before the age of 35 overweight is well borne, but after 35 it is associated with an increasing high death rate, and at middle life it becomes a real menace, the highest death rate of all being among those from 40 to 44, who are 50 to 80 pounds over weight." It is desirable to maintain the weight at about the average for the age of 30, as a study of death records accords to this weight the most favorable mortality. The following table shows the average weight for the various heights at 30 years of age.

Much more evidence is at hand, based on experience, establishing the untoward influence of obesity on health and longevity. Many pages of the Medico-Acturial report are devoted to the discussion of this subject, but repetition is only tiresome. Moreover, from the physician's stand-

point, generalities, no matter how plausible, even convincing, are not satisfying. A study of particular conditions is essential to a perfect understanding of the relation of obesity to health.

Obesity may be caused; (1) by conditions which themselves menace life and health, (2) or it may be the accompaniment of developing pathology, the two originating in a common cause. In either case *the obesity is the danger signal* which nature flies, unfortunately, too often, disregarded, the patient harboring the delusion that health is improving, (3) As obesity increases it both aggravates the cause of its genesis and gives rise to further deranged function and real pathology. Every case, therefore, of incipient obesity should be examined to discover the defects, that serious consequences may be forestalled; and every case of fully developed obesity should be reduced and normal functions restored as far as possible, that the patient may be rescued from a precarious situation.

As our subject is too extensive to make possible a detailed exposition within the limits of one paper, we will discuss very briefly the underlying conditions of which obesity is frequently the result or accompaniment, and we must bear in mind that although the individual factors are mentioned separately, they are interdependent, caused and aggravated one by another.

A popular fallacy to be guarded against is that, when obesity is a family trait, it is natural and both hopeless as to cure, and without sinister significance. That obesity is familial, simply means that the underlying defect is a family inheritance, and while such are more difficult to reduce, it is all the more imperative and all the more incumbent upon us, knowing the weakness, to help the patient guard against its consequences.

Neuroses frequently cause obesity. Adipolysis is inhibited through interference with the function of the vagus and sympathetic. This form of obesity most often results from emotion, shock or trauma, intoxications or infections, as after typhoid fever, puerperal infection, la grippe, intestinal intoxications, and disturbance or defect of the glands of internal secretion.

Deficiency of these glandular secretions may arise from a variety of causes, and is exemplified when obesity develops after the menopause, oophorectomy, or castration, lack of secretion of genital glands being the causal factor; in myxoedema, or after total extirpation of the thyroid, when thyroid secretion is deficient or lacking; in Dercums disease, adiposis dolorosa, from disorders of the pituitary. In diseases from disordered pituitary function, nervous derangement enters into the etiology, as the pituitary, though containing glandular elements, is the seat of nerve centers which control activities affecting metabolism. In fatty diabetes, there are faulty or deficient internal secretions of pancreas or liver, or both, existing either as primary failure, or secondary to perverted function or incompetency of other glands.

Diabetes and obesity are such boon companions that, if for no other reason, obesity should be shunned for the company it keeps. A depressed glycogenic function results in both. If this function be of low grade, though at first within normal limits, living conditions favoring, obesity may ensue, which in turn further depresses the function and increases the obesity; later, digestive glycosuria appears, many cases terminating in diabetes. Let it be noted, too, that this depressed glycogenic function affects the obese subject just as it does the diabetic, increasing the craving for food, especially for carbohydrate, and at the same time lessening power for muscular activity, automatically augmenting the conditions of too much food and too little exercise. It is a matter of record, vouched for by Heckel, that diabetes is accompanied by obesity in 90 per cent. of the cases. He also makes the statement that "obesity and diabetes are almost pathological equivalents," and that, "both have a common origin."

Oxidation process depressed below requirements, and below the level of food intake, may be a factor in obesity, a consequence of obesity, and a reason why obesity tends to perpetuate itself. It has been established that oxidation bears a certain relation to the surface area, so that decrease of the surface decreases the amount of oxidation. Now we know, mathematically, that large bodies have less surface proportionately than small ones, therefore, there is proportionately less oxidation the larger one grows, while the demand for food is increased.

Here enters again the influences of impaired glycogenic function. Observations have established that oxidation and glycogen function rise and fall together, so that the proportionately less surface area of the obese individual is accompanied by a proportionately less glycogen formation. The lowered glycogen forming power fails to keep pace with bodily requirements, so that the patient is less and less able to endure energetic physical exertion, and the essential stimulus of exercise upon exidation becomes well nigh lost. As oxidation is an ex-

pression of the activity of metabolism, the deep seated nature of any depression of the function and its bearing upon our subject is apparent.

Too little exercise and too much food are fruitful causes of obesity. They are not, however, we are beginning to realize, the only causes, and often are secondary, the result of abnormal physical conditions which must be remedied before admonition to better living habits can be of value to the patient. And we should bear in mind that to establish these better habits, the first step is to put the patient in a condition that makes self control and self regulation possible, to accomplish which is doing much more than can be measured by the scales.

At this point I wish to call attention to the fact that deposits of fat in and around the muscles often cause slow, difficult, even painful muscular action, and contribute to the inactivity of the obese. Such patients frequently say they are "stiff and rheumatic," though this form of so called "rheumatism" disappears with the obesity.

The portal circulation is an important element in obesity. If wrong habits of eating and drinking are indulged, the amount of blood in the portal vein and its tributaries is excessive, the stream moves slowly, and pressure is increased. Whether one overeats or not, after obesity is established, the fatty liver and weak heart, the sedentary habit which most obese find a necessity, and the flabby abdominal muscles which accompany, operate effectually to produce this portal stasis, thus accounting for the fact that fat tends to accumulate increasingly in the abdomen.

During even this review of conditions related to cause, one must be impressed by the repeated observation of one fact, viz: that obesity itself is a potent cause of further obesity, aggravating itself, inereasing its own causes, and multiplying its ill effects.

These effects are insidious, deep-seated and extensive.

We must bear in mind that while fat is being deposited in the subcutaneous tissue where it often is observed with complacency, it is accumulating also in the deep tissues of the body, in and around vital organs, and that in these locations it is very stable and extremely difficult to dislodge.

Hirschfelder, in his "Diseases of the Heart and Aorta," says:

"As an individual puts on body fat, more fat is deposited in the pericardium, spreads into myocardium, penerating into it between the larger strands of muscle, and finally settling beneath the endocardium, especially about the bases of the papillary muscles."

The heart apparently is enlarged by the deposition of fat, but as another authority, K. Hirsch states: "the increase in size and weight of the heart may conceal an actual atrophy of the heart muscle, and a corresponding weakness." At the same time obesity greatly increases the demands upon the heart. The organ itself, heavy with its burden of fat, offers more weight to be moved at each systole, while the total volume of the blood to be propelled increases with the bulk of the individual. The heart is crippled further by the fact that the fatty accumulations of the abdomen, portal congestion, and enlarged liver operate together to push upward the diaphragm, crowding the heart so that its axis approaches the transverse. Frey and Krehl have proven by experimentation that the action of the heart is greatly hampered by this unnatural position. Often there is no visible apex impulse. The heart complex is so characteristic and common that it has been named by Romberg, "Cardiac insufficiency of fat people." Can we wonder that the obese so readily succumb to acute diseases? Dilatation of superficial veins, so often seen in the obese, as for example, the Bardolphian butterfly across nose and cheeks should call attention to the weakening heart. Frequent epistaxis in a patient whose weight has increased considerably also suggests fatty heart.

The enfeebled condition of the heart induces a congestion of the lesser circulation which accounts for our fat patients' predisposition to bronchitis, asthma, emphysema and pulmonary oedema; the severity of pneumonia; and the rapidly fatal termination of tuberculosis when attacking the obese.

Arteiosclerosis usually accompanies obesity and adds to the heart load. The analysis of the relation is still under discussion. Certain underlying causes operate to the production of both conditions, and in addition, obesity itself contributes to the developing arteriosclerosis. Imperfect metabolism, which attends upon all advanced cases of obesity, and many moderate ones, results in the accumulation in the blood of toxic wastes, which in turn give rise to chronic toxemia, a potent factor in arteriosclerosis. Early in the development of obesity the arterial pressure is lowered on account of the weakened heart and the portal engorgement; after the entrance of the factor of auto-intoxica-

tion this condition is changed to the pre-sclerotic hypertension.

The arteriosclerosis and high blood pressure of the obese make them peculiarly subject to apoplexy. Heckel, who says that he has "come to consider that any one who is developing fat is also developing arteriosclerosis," also states that he has "often been able to predict apoplectic seizures in the obese with high blood pressure, even of young people," and cites several cases. Von Noorden, an authority on obesity, reports as a result of his studies that 18 per cent. of the obese die of apoplexy, a startling figure when compared with general mortality statistics. In the registration area of the U. S. (as reported by the Federal Census Bureau) the mortality from cerebral hemorrhage in people over 30 years of age averaged but 6.75 per cent. during the five years from 1909 to 1913. In the German Empire, which possibly furnishes a fairer comparison, mortality from cerebral hemorrhage from 1907 to 1911 for the same ages is even lower—but 6.16 per cent. Cut off the first ten years, when cerebral hemorrhage is less likely to occur, and in the U. S. from 1909 to 1913 we note that mortality from cerebral hemorrhage after the age of 40 is but 8 per cent. As compared with Von Noorden's 18 per cent. these figures have even greater significance when we consider that from 40 to 50 years of age occurs the highest mortality in the obese, before the high mortality from cerebral hemorrhage is due. In fact, including all cases, obese and otherwise, the mortality for cerebral hemorrhage between the ages of 40 and 50, (based on reports for the years above cited) is less than 4 per cent., suggesting that few people die of apoplexy between the ages of 40 and 50, who are not obese.

CEREBRAL HEMORRHAGE.

	Age	Mortality
Obese	All ages	18%
U. S.	30 years and over	6.75%
German Empire	30 years and over	6.16%
U. S.	40 years and over	8%
U. S.	40 to 50	4%

Fat collects early around the kidney, interfering by pressure with its circulation, while fatty infiltration of the kidney itself more seriously threatens its integrity. Albumen in the urine of the obese often appears from slight cause, even in early cases, e. g. from fatigue or a common cold, slight infections or intoxications, either endogenous or exogenous, while the obese are much more disposed than others to chronic nephritis. The relation of arteriosclerosis to the kidney lesion is apparent.

The renal debility of the obese results in a crippled elimination, and loads the blood with imperfectly reduced poisonous products of tissue metabolism, the resulting toxemia causing tachycardis, sick headaches, skin eruptions, neuralgias, neuritis, irritability, nervousness, even neurasthenia, all outgrowths of the imperfect elimination. Osler points out that the "daily renal output of the obese may be diminished one-half, while the amount of food ingested is plus. The portal stasis, too, contributes to the kidney insufficiency and disease, causing primarily, delayed and deficient secretion of urine.

The liver is disturbed profoundly by obesity. It becomes loaded and infiltrated with fat earlier than any other organ, and it is on account of fat in the liver, that glycogen function so soon begins to fail. As the hepatic adiposity increases, other functions are impaired, digestive disturbance ensue, often constipation results, or constipation and diarrhea alternate; acholia is present intermittently, as shown by occasional white stools; urobilin may appear at times in the urine, giving it the characteristic color and reaction; and cholemia frequently is present; late, steatosis of the liver may supervene. The existing stasis of the pertal circulation further impairs liver function and may lead even to the destruction of the liver cells. Cirrhosis has developed. This extreme is rare, however. Functional disorders and their accompaniments are the common results, most frequently gout, diabetes, gallstones and cholecystitis.

The occurrence of gallstones and cholecystitis in the obese is astonishingly frequent. There is good authority for the statement that one in every two or three fat women develop gallstones at some time in their lives. Perhaps the cases are not all recognized, but the statement is based on autopsies. The mechanical causes favoring intestinal infection and stagnation of bile in gall bladder are to be found in the flabby abdominal muscles, the impeded diaphragm and the sedentary habits, while the frequent hepatism and cholemia of the obese must favor hemotagenous infections. Recognition of these facts leads us to appreciate that the frequency of gallstones in the obese is not accidental.

The pancreas of the obese is always fatty, a condition which contributes substantially toward diabetes, and the blood vessels of the fatty pancreas are easily ruptured, causing colic, vomiting and pancreatitis.

Varicosities and hemorrhoids so evidently are the natural results of the venous and portal

stasis that the proneness of the obese to these diseases needs no further explanation. Other results of the general venous and portal engorgement are splenomegaly, abdominal tympanitis, enteritis, and intestinal and other hemorrhages, even appendicitis, which, it has been observed, is especially common among the obese.

The somnolence of the obese may be of gastro-intestinal origin, or from venous engorgement of the brain, or from endocrine incompetency, but from whatever cause, it contributes to further muscular inactivity, and therefore augments the adiposis.

The portal congestion, together with the pressure on the pelvic organs by masses of fat may produce disturbances of menstruation, congested uterus, even displacement, and altered function or congestion of ovary. The obesity associated with deficient internal secretions frequently is accompanied by derangements of the sexual organs. Fuchs makes the statements that "One out of every four or five obese women are sterile." Our observation may not equal this figure, but that the obese are frequently sterile cannot be gainsaid.

Another matter of observation is the dystocia of the obese. Williams speaks of tardy labor as "often associated with imperfect development of the musculature," and calls attention to the fact that this condition "is relatively common in corpulent individuals."

DeLee points out that "The combination of infantile pelvis and obesity are not uncommon." In this association the obesity and deformity may be independent, but, on the other hand, they may originate from a common cause, active even during the stage of development.

While we grant that no one case of obesity will develop all the pathology and disturbed function just reviewed, it is to be appreciated that the obese individual is threatened with several or many of the dangers enumerated, and the imperfect vital functions of such patients unfit them for extra strain, for fatiguing, exhausting work, for operation which may become imperative, for accident which may occur, for resisting infections and withstanding long illness, in short, for the exigencies of physical existence to which every one is liable.

And further I wish to emphasize that fatalities are daily occurring, the foundation cause of which, though unrecognized, should have been discovered in time to have averted calamity, and would have been discovered had the obesity signal been considered by patient and physician with adequate gravity.

MEDICAL TEACHING IN DETROIT AT PRESENT AND IN THE FUTURE.*

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In conversing with many citizens of the State of Michigan upon the advisability of medical teaching being given in the City of Detroit, I have been struck with the wide variation of opinions held by the people interviewed. Most every man of education and thought, has decided views upon the subject, be he business man, lawyer, minister, doctor or of whatever calling, and the views of all are at decided variance. Let it also be stated that opinions of members of the medical profession alone, are uniformly as varied as opinions gleaned from men of other callings.

Because of this wide difference of opinion and the strong beliefs held by many, apparently without proper consideration on the subject, it seems to me suitable to present as concisely as possible the arguments for and against the continuance of medical teaching in Detroit, so that the subject may be opened for thoughtful and perhaps fruitful discussion.

It is not my purpose to mention even slightly the past histories of the various medical colleges in the city or the state; each and every one, whether living or dead, has served or is serving its purpose. The vital question now is whether the instruction of prospective practitioners of the medical sciences is of benefit to the three quarters of a million or more citizens that form what is known as Greater Detroit. If it can be shown that a first-class medical college is essential to a "Bigger, Better, Detroit," then each and every employer and citizen wishes it. If it is not an essential factor in the progress of this ever growing metropolis, then let us not waste time, labor and money in the effort. This is not a matter that concerns the medical profession of the city alone. It is of far more importance to the citizens of Detroit themselves. They are dependent upon the knowledge of the man who advises them in their desire to protect themselves and their families from disease; or in case misfortune comes, in the integrity and ability of the physician whose advise they seek. If the teaching of the medical sciences in Detroit furnishes a higher average of knowledge to the medical servants of the city, each and every citizen desires its continuance.

First let us consider the arguments against the teaching of the medical sciences in Detroit. There are many who believe that such teaching

*Read before Detroit Academy of Medicine March, 1916.

is unnecessary, and the argument which proves their opinion is one that is weighty and forceful. Briefly it is as follows: When the State of Michigan decided in the year 1847, that its highest institution of learning should be located in Ann Arbor, it naturally designated that city as the proper place for the training of future physicians. The University does not belong to the city of Ann Arbor, it belongs to the State of Michigan and the city of Detroit pays more for its upkeep than any other portion of the entire state. This being so, the citizens of Detroit should make use of the teaching facilities of those whom they help to pay, and it is wasteful and useless to attempt to perform like functions for themselves. Why then should the medical profession of Detroit desire a college and what useful service would such a college perform?

The above when considered without analysis is a forceful argument, let us add one more which contains more of truth, even though it be not as forceful. The present tendency is to limit the number of institutions teaching the medical sciences and to raise the standards of all. By this means the number of graduates permitted to practice medicine would be fewer, but they will be better equipped, better educated and consequently more competent to serve the public intelligently. It will make it more difficult for the dishonest and unprepared man to enter this particular calling and, as a result, the entire medical profession will be elevated to a higher level. As stated above, this can best be accomplished by limiting the number of institutions permitted to teach medicine and surgery, and one good institution is sufficient for the needs of any state. This being so, and the State of Michigan having one of the best institutions for this purpose in the country located at its University, what is the need of another institution for medical instruction in Detroit, less than forty miles away.

This apparently is a sound and logical argument, and unless a careful consideration of the local needs of Detroit is made, one would agree with it most heartily.

Let us next turn our attention to the reasons for the continuance of medical teaching in Detroit. The argument frequently given by many medical men for the need of it is as follows:

Detroit is a city with a population of over 700,000. It is growing rapidly every day. The amount of material thus furnished for the clinical teaching of medicine is tremendous and consequently should be made use of. This to the layman sounds like a rather heartless and coldblooded proposition, that the sickness and misfortunes of the needy should be used for the instruction of medical students. Let us pause a minute to disillusion such believers. In reality the best thing that can happen to a man of the needy poor class unfortunate enough to require medical attention is for him to seek the aid of the teaching clinic. If he seeks the private services of the average active practitioner and is unable to give recompense for the time and labor given, he may or may not receive proper examination, depending upon the moral qualifications of the individual he sees. Only too frequently, after a brief statement of his complaints and without any proper examination at all, is he given a bottle of something or other and let go at that.

To illustrate this further, let us consider a concrete example, one that is met with only too frequently in actual hospital practice.

John Jones has a pain in his stomach on Tuesday. When he first notices it he is working in the machine shop of the A. B. C. plant where he receives $2.50 a day for his labors. He does not stop work on account of the pain, because he has a wife and four children at home and the money for that day's work is needed for actual living expenses. However, when he gets home that evening the pain is much worse, so his wife decides that he must see a doctor. Doctor X lives in the same block, but he charges two dollars for an examination, while Doctor Y who lives three blocks away charges one. Two dollars and a half a day hardly makes ends meet, so Doctor Y is interviewed. He asks about the pain and also if the bowels have moved. No they have not moved today. A dose of salts is given and a dollar changes hands, and John Jones is told to come back tomorrow if the pain is not better. That night the pain gets very bad and then suddenly almost ceases, but John Jones is not so well. Next day he has no more money, so some friends take him to the hospital and he is operated upon for a ruptured appendix. The abdominal cavity is filled with pus and a tube must be inserted. Possibly in four or five weeks he leaves the hospital, but it is at least two or three months before he can work again and then he cannot do the heavy work of the machine shop.

Now let us see what would have happened to John Jones had he gone to a teaching clinic. Possibly he would first be interviewed by one of those dreaded students and a history of a sudden pain in the abdomen taken. Then the instructor in charge of the students would have had John Jones remove his clothes. He would

have felt the abdomen and observed how rigid and sore it was and he would have had the students under his charge do the same. Next student A would have examined the urine, taken the temperature, also the pulse while student B was doing a blood examination. The report would be made and checked up by the physician in charge—urine negative, pulse 120, temperature 102, blood examination hemoglobin 100 per cent., total reds 5,400,000 total whites 12,000—differential count, polymorphonuclear 85 per cent., large mononuclear 5 per cent., small mononuclear 10 per cent. The instructor would then explain the meaning of these findings to the students. He would tell them that those blood findings showed a serious inflammation and students A, B, and C would all be instructed to examine the heart and lungs to see if there was any reason why an anesthetic should not be given. This being confirmed by the instructor, John Jones and the students are sent to the surgeon in charge of teaching clinics, and the students see a badly inflamed but unbroken appendix removed. John Jones is in the hospital one week and back at work as good as ever in two. Has John Jones suffered from being used as teaching material?

This is just one example illustrating an acute condition. Such cases do not happen as frequently as those of the John Joneses who have more slowly progressive conditions. The poor man with just a little distress in his stomach after eating, where Dr. Y can find nothing, even by careful examination with the methods given above, is kept encouraged with various medicines until the cancer growing within has become so widely spread that nothing but death can result.

Perhaps Doctor Y has suggested that an X-ray examination would show the trouble, but an X-ray examination costs from ten to twenty-five dollars and John Jones cannot afford that at $2.50 per day, when he has a wife and four children to support. Apropos of this, let me pause to remark that Harper Hospital has at present a yearly gift of two thousand dollars all of which is spent exclusively for the X-ray plates used in the examination of cases of the John Joneses whose incomes do not permit them to pay, and this alone prolongs the lives of many to useful citizenship. In addition let me add that this hospital spends from $60,000 to $75,000 every year upon the needy poor used for clinical teaching.

It surely is not necessary to digress further to show that the less fortunately fixed members of society composing the citizenship of Detroit are most decidedly benefited because of the teaching of medicine in the City of Detroit.

Let us next turn our attention to the members of the medical profession themselves and see wherein they receive benefit. It is a well recognized fact that in any line of endeavor competition is the most efficient stimulus to progress. The practice of medicine in former ages was termed an art. At present it is recognized as being composed of many sciences, and each year finds it more scientific and consequently more exact. It is impossible for the busy practicing physician to delve through the vast amount of literature printed each and every week upon the new truths elicited in these many and varied sciences, to separate the chaff from the wheat, or even to keep up to time in the knowledge of improvements that are of worth in the care of the sick. It is for this purpose that we have medical meetings so that the knowledge of the new benefits may be imparted, their value discussed, and their ultimate worth be known. I have frequently heard it stated that a medical meeting was beyond the understanding of many men of other professions, that all that happened according to their views was a series of disagreements and fights between the various speakers. Most assuredly we disagree—most assuredly we fight—I would not give a cent for any medical meeting that was unproductive of warm discussion and the reason is evident. In the discussion of new scientific facts, those who are acquainted and have experimented with the same have approached the subject from different angles, and different points of scientific importance have impressed them, one may deem a thing of value, another may deem it dangerous, and it is well to know and understand both sides before adopting either view.

Let me give a practical illustration. Fifteen years ago there were many capable medical men who claimed that diphtheria antitoxin was absolutely specific and the most efficient remedy known. Other equally capable men would state that while it was of benefit, it was very dangerous to use, that they hesitated to use it because of this danger and cited as proof several cases of sudden death after its administration. Such disagreements were naturally detrimental to the opinion held by others of the knowledge of medical men, and yet both sides were right. Then further labors showed that the danger from the use of antitoxin was not from the antitoxin *per se*, but from the vehicle in which it was carried and still further researches enabled those who now prepare this most efficient

of remedies to eliminate the danger, until at present all capable medical men are unanimous in their knowledge of its efficiency. Thus, because of the disagreements and fights of medical men, an efficient and safe remedy has been evolved.

This seeming digression has been made simply to substantiate the following statement, which is that the man who attends medical meetings and listens to, or perhaps takes part in, these discussions is better equipped and more competent to attend to the needs of those who make use of his services than the man who remains always with his practice and has no desire to keep abreast in the knowledge of the latest truths which science is constantly mastering. Again this in turn leads up to the statement that the man who is constantly instructing others in the knowledge of any one subject must keep himself up to the very latest in all that is known about that subject. If he does not do so he is inefficient as a teacher, his own students will soon discover this and he must be ultimately superseded by someone else of more progressiveness. Such being the case in a city as large as Detroit where there are many, not only capable of, but anxious to perform the same office, furnishes the best possible stimulus for knowledge and progress and consequently raises the standard of the medical profession locally and makes more efficient practitioners for the citizens of Detroit.

Let it be understood that all of this is true provided—and this is an important proviso—that medical teaching in Detroit is carried on only on its highest plane. The local college has progressed in the past five years probably more rapidly than any other medical institution of teaching in the country but the majority of those connected with it realize that this progress must continue and that there is still much to be improved. The graduates of this college form a goodly proportion of the medical advisers of Detroit and their opportunities for learning should be unexcelled. To properly train a student becomes more and more expensive every year, and Detroit must be willing to meet this expense, for it would be poor economy to save on the teaching and turn out an unskilled and inefficient product to give advice in matters perhaps of life and death to our own citizens.

There is one school in a certain southern state whose graduates are not permitted to practice in their own state because of the rating given this institution, owing to their lack of proper facilities for instruction—surely a most deplorable and disgraceful condition—and yet their graduates are allowed to pose as intelligent physicians in other states less progressive in their restrictions. So if this paper proves an appeal for the continuation of medical instruction in the city of Detroit, it is so, only for the highest and most efficient class of instruction that can possibly be given. As stated before the local college has improved but it must improve even more to be an asset to the citizens of this metropolis.

Lastly let us turn our attention to another class of citizens of Detroit and see wherein they are benefited by the continuance of medical instruction locally. I refer to the employers of labor, to those capitalists whose generosity must be appealed to in order to continue this most needed industry of properly equipping the future medical man. No institution of medical teaching can be self supporting. It must be heavily endowed; for the expense of instruction is ever increasing and yet instruction should be available to rich and poor alike, since frequently the man who has but little for the necessities of life, gives the most for the benefit of mankind in the end.

So let us turn our attention to our local capitalists and see wherein their benefit comes. If they choose to take proper advantage of the benefits of local teaching their returns will be the greatest. Not only will the physicians who render service to themselves and their families be better equipped, but they will receive actual financial benefit from the better medical services rendered their employees.

In order to illuminate this last statement more satisfactorily let us consider a few specific examples. The "Workingmen's Compensation Act" has now been in effect sufficiently long so that many employers have formed decided opinions as to its justice or injustice as the case may be. The average employer is perfectly willing that anyone suffering injury while engaged in his duties should receive recompense for the same, but it is not just or right that he should be forced to give recompense for conditions for which he is in no wise responsible, and, only too frequently, he is forced to do so, because of lack of knowledge of the medical man upon whose opinion he relies.

Recently my attention has been called to two cases in which employees of a large local concern were injured slightly while at work. The injuries resulted in persistent leg ulcers that refused to heal. This condition had existed six weeks in one case and longer in the other. Both men were suffering from syphilis acquired years before, a condition that their employment

had nothing to do with at all, yet both were being continued upon the pay roll of the concern that employed them and being furnished medical attention by that concern's physicians who did not ascertain the true nature of their malady. Most assuredly their system of medical attention was inefficient and must have been a source of decided expense much greater than its actual cost.

From the same concern I recently saw a case of tuberculosis of the ankle following injury while at work. Of necessity this will be a long and protracted illness and of considerable expense to that concern. The accident was responsible for the tuberculosis of the ankle without a doubt, yet it was not responsible for the pulmonary tuberculosis that the employee had when first engaged. This case presents possibilities for an expensive law-suit. It is almost a certainty that the firm must pay some compensation, and also the wages of another employee while this man is laid off—yet who is responsible? The answer is simple. The organization of their medical department is inefficient and their medical advisers are incompetent. For their own protection every employee should be examined medically before being engaged. It should be known whether he suffers from Bright's disease, diabetes, cancer, syphilis or tuberculosis, whether he is a drinker or has a rupture, whether certain forms of labor will cause him harm or not. The time is fast approaching when the employer of labor will realize that in order to protect his industry and to elevate the efficiency of his employees, the latter should be subjected to as rigorous an examination as that exacted by any life insurance company before being accepted.

Let me give just one more actual illustration to impress this point. Last spring one of Detroit's successful manufacturing plants employing a large number of men had several laid off because they were suffering from typhoid fever. The number of cases of this disease amongst the employees of that plant was so out of proportion to others in the city that it attracted the attention of the Board of Health. It was found that the plant obtained its water from two sources, one the city water supply, the other from a private pump of the plant on their own grounds. Water from the latter was found to yield typhoid bacilli, that from the city supply was not contaminated at that time. There were about twenty men laid off because of this epidemic, and let us say their average illness was six weeks. In round numbers the firm lost 700 days labor of skilled workmanship and was forced to break in and train green men to take their places. Certainly there must have been considerable monetary loss, all of which would have been prevented had this concern been possessed of the advice of a man properly trained in the medical sciences.

Other examples could be given but I think enough has been said to convince the employer of labor that it will be a saving to him if he lends his aid to a higher standing of the local medical men. Some of them employ competent medical advice now—more do not—but the continuation of medical teaching in Detroit is essential for the needs of all.

This being agreed upon, how had the continuation best be carried out. There are two ways in which this is possible at the present time. The first is the building up and developing of the Detroit College of Medicine and Surgery until it is excelled by none. This is an expensive method but absolutely essential if no other equally efficient can be found.

The second is to terminate the existence of the local institution and have the University make use of the material available in the present and future acceptable institutions of the city. In order to best bring this about the entire teaching staff locally would resign, the question of renewed teaching would be placed entirely in the hands of the Regents of the State University and our only desire would be that their actions should always be such as to increase the ability and knowledge of local practitioners whether they be students or not.

Strange to state however, this question of the University taking charge of medical teaching in Detroit has been a much discussed question for almost half a century and the chief opposition to it has always arisen in Ann Arbor. The opinions of some of those who influence the progress of medical instruction at the State University seem to be rather provincial. They regard the Medical Department as being in and of Ann Arbor and fail to consider this institution in its broader sense with responsibilities to the state at large.

Then again it must be stated that the Medical Department of our State Institution has ceased to progress in the teaching of the medical sciences with the same degree of rapidity that it was possessed of in former years.

There was a time when its graduates, because of their training were called to the chairs of important branches of medical teaching in the best institutions of the country, both east and west. Now other institutions are training their students equally well or even better, with the

consequent result that fewer graduates of the University of Michigan are being selected for important teaching positions in our better institutions.

This is a fact that cannot fail to produce chagrin to the graduates of the University, since, when all is said, the best institution of learning is the one that produces the largest number of skilled and recognized teachers from amongst its graduates.

It is interesting in this connection to briefly review the factors which at one time placed our State University first, above all others, in the production of medical teachers. These are self evident and a knowledge of them will show in what direction efforts must be turned to keep this institution in the first rank.

In the early days the teaching of medicine was devoted entirely to clinical work. Then came the era of rapid advance in scientific knowledge, and the laboratory side of medical instruction received chief prominence. Those in charge of medical instruction at our State University at that time were possessed of sufficient foresight to see the importance of such instruction and this, together with the fact that they were compelled to lay especial stress upon this form of teaching because of their lack of clinical facilities in Ann Arbor, proved most fortunate for the Medical Department. As a consequence it was actually the first medical school to produce well trained and thoroughly equipped laboratory men and as a result it ranked first amongst all such institutions in this country. These well equipped men were called to fill chairs in other institutions many of which were situated in large centers of population which furnished tremendous clinical facilities. The inevitable happened and, as many of these institutions were possessed of unlimited means their courses in laboratory instruction advanced rapidly until they were the equals of any other. This again placed them upon an equal footing with the University with the added advantage of far larger clinical facilities.

I feel sure that those in control at the University believe that their clinical facilities should be much increased, indeed the rightfully agitated demand for a larger hospital and an increased number of beds in Ann Arbor proves this. Such a step should be taken in any case, but even a two million dollar hospital, with every possible advantage that it may bring, can never aid the University in obtaining certain classes of medical cases that are absolutely essential for the proper teaching of clinical medicine. Among these might be mentioned acute surgical conditions such as result from injury, which the young graduate is most likely to be summoned to attend and, more important, the acute infectious diseases such as diphtheria, small-pox, measles, etc. which obviously cannot be transported by rail for the sole purpose of being used for clinical material.

The tendency and further advance in medical teaching from now on will be closer corelation between the laboratory and the clinical departments and for the proper advancement of medical teaching, availability of a large amount of clinical material of every sort will be essential.

It might be respectfully suggested that the addition of the clinical material furnished through the control of medical teaching in a city with a population of three quarters of a million might be of aid in the better equipment of the students at our State University.

Be that as it may, either the University must realize its duties to the state and supervise not only the teaching of medicine throughout the state, but also the further instruction of practising physicians; or else there must be a better and a richer institution in Detroit itself.

The continuance of local instruction is absolutely essential to a "Bigger, Better Detroit."

THERAPEUTIC INDICATIONS IN APPENDICITIS.*

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IONIA, MICH.

In dealing with appendicitis one must recognize that this disease often presents a rapidly changing aspect depending upon the type of the infecting organism, the reaction of the host to the toxines, and the duration of time elapsed since the inflammatory process began. To meet successfully these varying conditions, to operate or not to operate, and if operation is performed to do it at a time best calculated to serve the interests of the patient; to do enough and not too much of an operation; these are some of the phases of this question which tax the skill and judgment, and make this subject one of interest to every practitioner.

Early operation has universally proven to be the safest procedure, but in order to operate in the early hours of appendicitis, it is not alone necessary to make a diagnosis. One more factor must enter into the plan of treatment, viz: the consent of the patient.

*Read before the Ionia County Medical Society, December, 1915.

The average layman is not trained to weigh facts as they are known and as they are presented to him by his physician. He is inclined to believe the tell-tale stories poured into his ears by his numerous friends who are ever ready to give advice. It is one thing to say operate in the first twenty-four hours, and quite another thing to always get the consent of the patient to do the operation in the pre-suppuration stage of the disease.

The delay in operating may not always be due to the refusal of the family or the patient to give consent, but to other reasons, the most common of which is tardy diagnosis. If appendicitis symptoms were always classical then the late diagnosis excuse would disappear.

The wide range of excursion of the cecum, described by Wilms, affords an opportunity for error if appendicitis be diagnosed on the location of the point of tenderness at a given point. Transposition of the viscera as reported by Schrup, and from the Mayo Clinic, must be kept in mind.

The base of appendix, according to Lanz, (1) lies at the junction of the middle with the outer third of a line between the two anterior superior spines of the illia on the right side, and any incision to expose the appendix, according to Murphy, should be made through this point. This does not preclude the fact of pain being referred to McBurney's point, which is "third in order and importance in our quintet of symptoms of appendicitis—pain, nausea, and vomiting, local sensitiveness, elevation of temperature, and leucocytosis." (2).

In the chronic cases of appendicitis the X-ray has become an important help in diagnosis. This however hinges upon whether the appendix has become obliterated by chronic inflammation (2). J. T. Case and other roentgenologists have studied the size and length of the lumen; the presence or absence of constrictions or kinks, adhesions, the question of drainage (emptying time) of the appendix, the relation of the visible appendix shadow to a point of pain on pressure, the position of the appendix, whether retrocecal, procecal, etc. Case reports being able to study the bismuth filled appendix in one out of three patients examined, and he believes that the patulous appendix exists in about this ratio in patients exhibiting gastro-intestinal symptoms.

The entrance of bismuth into the appendix is held by Case, Imboden, (6) and others to be pathological, but if this diminuitive organ is able to empty itself of the bismuth mixed cecal contents within twenty-four hours its motor function can be said to be normal. But with bismuth remaining in the appendix indefinitely there is reason to suspect this condition as being potentially appendicitis.

But to come to an acute case of appendicitis in the early hours of the disease refusing operation the question naturally arises, how can this case be made a good operative risk should the signs of abscess appear some days later?

No hard and fast rules can be formulated to say when it is safe to wait. The ideal time in which to interfere is before the appendix has ruptured, or the infection has extended to the surrounding structures. Operation at this time is of but little greater risk than if done during the interval period. The Ochsner treatment takes care of most cases of appendicitis, but the responsibility of holding a case for a favorable outcome is great, and this responsibility should never be taken in the light of present day statistics.

Those who have had the experience of seeing the family physician advise against operation in the early hours of this disease, when the operation could be performed without risk, and then have seen the patient die of peritonitis in a few days, or have seen the watchful waiting policy pursued until the abscess becomes obvious to the eye of the physician, and then an operation becomes a serious undertaking because of the danger of the formation of fresh abscesses, thrombo-phlebitis, sub-hepatic abscesses, metastatic parotitis, etc.; or, those who have seen two or three mild attacks followed by a fatal attack, will have little tendency to procrastinate and wait for abscess formation with its attendant risks when they can be avoided.

Ochsner (4) report a mortality of 1.9 per cent in 255 cases of acute appendicitis without abscess; 3.4 per cent. in 177 cases with abscess; and 30 per cent. in those with general peritonitis.

E. M. Stanton (5) reports on the pathological examination of 539 appendices removed during or within ten days following an attack of appendicitis, classifying the data with reference to the symptoms and the day of the disease. In every case of acute appendicitis on the first day there was definite blocking of the lumen of the organ by a sero-fibrinous exudate. There was a deposit of lymph on the peritoneal surface, and at the end of twenty-four hours there was microscopic evidence of gangrene. The second day is characterized by an intense leucocytic infiltration of all the coats, accompanied by ulceration of the mucosa, and a well marked fibrinopurulent peritoneal exudate, accom-

panied by an increase of the areas of gangrene. On the third day the process of destruction reaches its maximum, and in the nonmalignant cases there are evidences of repair. In the fourth, fifth, and sixth days in the less severe cases the repair progresses rapidly, while in the more severe cases there are evidences of true abscess formation, but not until the sixth or seventh day are the walls sufficiently strong to permit manipulations incident to packing off uninvolved intestine preparatory to drainage.

Stanton agrees with the Ochsner principle of treatment that purgatives aggravate the inflammatory condition and their administration is followed by perforation and peritonitis. The earlier the peritoneum is put at rest and food and purgatives withheld the more localized the condition will be.

From this report it is seen that appendicitis naturally divides itself into quite definite clinical and pathological stages and affords some basis for urging a careful analysis of the clinical findings in any given case.

FOUR CLINICAL STAGES IN APPENDICITIS.

1. From the first to the twenty-fourth hour, during the ascending stage of inflammation before pus has formed or the inflammatory process has extended to the surrounding organs. Operation in this stage is done with little risk.

2. From the twenty-fourth hour to the fifth or sixth day while the inflammatory process is limited by but delicate adhesions, and during the time when the body is getting up resistance to the toxines. This is the most dangerous period to offer operative help to patients with this disease. Most of the mortality takes place during this stage, and unless unusual reasons present themselves the operation should be deferred. If the twenty-four hour period has passed then fasting, the Fowler position, the hot hip and leg bath or pack, combined with the ice bag to the lower abdomen, and perhaps some morphine to induce rest and quiet and favor the formation of adhesions, this will carry the case along to the sixth or seventh day. During this stage the perforated or gangrenous appendix is the nucleous of an abscess, at first small but with a localized peritonitis. Our whole effort should be directed toward keeping this process localized, and wait for nature to wall off the abscess by adhesions firm enough to make the removal of the case to the hospital safe, and to tide the patient over into the next stage. If, however, a high temperature and rapid pulse with severe symptoms of intoxication persist, operation in this stage must be undertaken. The operation done at this time and with these symptoms present must be of the simplest order. An incision about an inch inside the anterior superior spine of the illium, hugging close the parietal peritoneum, so that the lateral wall of the abdomen forms one wall of the sinus, and drainage established, is all that is necessary. No effort should be made to find the focus of infection or to remove the appendix, and unless it presents itself into the wound it should be left. To open the abdomen and protect the intestines in the usual approved way from pus contamination, and then ever so carefully dig a gangrenous appendix from its septic bed, tie and cut it off, opens such additional lymph spaces to the entrance of toxic material that the already overloaded system is unable to cope with the condition and the results are too often disastrous. To curette a septic uterine cavity is analagous to the often overdone appendicitis operation performed according to textbook technic regardless of the ability of the patient to withstand the shock.

Dr. Murphy (5) tersely says:

> "I feel convinced that the great mortality which has been reported in operations in the second stage and under clinical conditions mentioned above, in a measure, has been due to excessive manipulation, sponging, flushing, adhesion separating and prolonged operation. The deaths in these cases of acute infection are due to the depression resulting from a sudden absorption of an overwhelming dose of bacteria and their products. This absorption is favored by the manipulations mentioned."

If it were an abscess in any other part of the body due to infection or a foreign body we would naturally open the abscess first, letting down the pus tension and thereby the toxic resorption, and when a more favorable time presented itself remove the foreign body if one were present. Principles of surgery would therefore seem to say that drainage should be the first and only object of operative intervention at this stage of the disease.

3. From the sixth day onward. If at this time the temperature is falling, the pulse slower, and the local and general symptoms are abating the operation should be deferred, the case becoming an interval one. But if the temperature, tenderness, distension and pulse rate gradually increases, and the signs of abscess persist, operation is the only alternative. All that has been said relative to the preceding stage applies at this time except the case is not so urgent. The abscess has had time to wall itself off by firm adhesions, and the body adjust itself to the toxines.

The first object then is the evacuation of the pus. The matter of finding the appendix and

removing it becomes a secondary consideration. Primary removal of the appendix is only indicated when it can be done easily, or when it becomes necessary for a recurring abscess.

The general rule in surgery to open an abscess at the place of pointing does not always hold good in abscess in this region. By far the safest plan here is to make an exploratory incision at the right border of the rectus or in the middle line and explore the condition of the cecal region in order to determine that the abscess has not already ruptured into the free peritoneal cavity. If there is no sign of pus seepage then a drainage incision similar to the one above described should be made just external to the abscess and a drainage tube inserted. The exploratory incision should now be closed without drainage unless perchance it becomes contaminated. No attempt is made to find the appendix, but if it should present itself, so that it can be removed without disturbing or breaking up the adhesions, it is removed.

According to Kocher, Korte's mortality was only 0.5 per cent. when the abscess was simply opened, while it was 8 per cent. when the radical operation was done at the same time.

Abscesses not only form at the classic sight between the umbilicus and the anterior superior spine but in the left illiac fossa, in the pelvis, in the right lumbar region, below the liver or diaphram, varying with the original position of the appendix. On this account it is obvious that incisions must be made to meet these conditions, whether it be in the right or left side above Pouparts ligaments, in the middle line, or below the costal margin.

4. The Interval Period. This offers only slightly different conditions for operative interference than if done in the very early hours of this disease, providing enough time has elapsed since the acute stage so that resolution of the inflammatory process has completely taken care of all infecting organisms and the exudate has been absorbed. Just how much time should elapse before the interval operation will of course depend upon the severity of the last attack, varying between ten days and three months.

Whether every patient who has had an attack of appendicitis and recovered should have the interval operation is perhaps best answered by the fact that everyone who has had one attack is predisposed to another by the adhesions and scars of the inflammation, and that 60 per cent. of interval operation cases have had more than one attack. Incisions large enough to thoroughly explore the illio-cecal region, watching out for bands of adhesions, and the incompetent illio-cecal valve, make for best results in surgery of this region performed during the quiescent stage of this disease. The early use of cathartics after operation is a potent factor in the preventing of adhesions reforming and should be well looked to.

In my own experience I have had twelve cases of appendicitis with abscess to deal with which have been treated by these methods. In all of these cases no attempt was made to find the appendix, and in only one case did the symptoms recur when finally at the third attack before the abscess had formed the appendix was sought for and removed. In this case the appendix had sloughed off at its base and was attached only by its mesentery.

All cases are advised that they should have the interval operation, but it is not always possible to secure consent. My mortality record thus far is clear with one exception, that of a ruptured abscess with general peritonitis before operation.

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3. Case, J. T. *N. Y. Med. Jour.*, July 25, 1914.
4. Ochsner, Clinical Surgery, p. 269.
5. E. M. Stanton, *Am. Jour. Med. Sc.*, 1915, CXLIX 524.
6. Imboden, *Am. Jour. Roentgenology*, 1915, II, 581.
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The Effect of Opium Alkaloids on Respiration.—D. I. Macht has reinvestigated the effect of opium in two classes: In the one class is morphine, the prominent sedative alkaloid, which may not interfere with efficient respiration when the dose of the drug is small. In contrast with this are narcotin, papaverin, narcein, thebain and cryptopin, all of which are stimulants and in large doses are excitants of the respiratory center. Codein belongs to the morphine class, though in large doses it may also excite the respiratory center. The action of mixtures of opium alkaloids is a summation of their individual effects. It thus appears that if the object sought is a reduction of the labored activity of the respiratory muscles in a given case, the drug opium itself or mixtures of its alkaloids are to be preferred to morphine alone. If, on the other hand, it is desired to diminish the excitability of the cough reflex mechanism, it seems that a simple substance, as morphine or dodeine, is to be preferred (*Jour. A.M. A.*, Feb. 12, 1916, p. 514).

TRANSACTIONS

OF THE

Clinical Society of the University of Michigan

Stated Meeting, February 3, 1916

The President, UDO J. WILE, M.D., in the Chair
Reported by REUBEN PETERSON, M.D., Secretary

THE ASEPTIC TECHNIC METHOD IN THE MANAGEMENT OF A CONTAGIOUS HOSPITAL.

REPORT OF THE CONTAGIOUS DEPARTMENT, UNIVERSITY HOSPITAL FOR THE YEAR 1914-1915.

DAVID MURRAY COWIE, M.D.

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During the year ending June 30, 1915, two hundred and twenty-three cases were cared for in the contagious division of the Pediatric Service of the University Hospital. The new Contagious Hospital received its first patient August 9, 1914. The following diseases were treated:

TABLE I.

List of Cases Entering Contagious Hospital from August 9th, 1914 to July 1st, 1915.

	Cases	Recoveries	Deaths
Chicken-pox	29	29	0
Diphtheria	49	49	0
Diphtheria Carriers	3	3	0
Erysipelas	4	4	0
Erysipelatous Cellulitis	1	0	1
German Measles	1	1	0
Impetigo Contagiosa	3	1	2
Mumps	29	29	0
Pemphygus	1	1	0
Scarlet Fever	26	26	0
Septicemia	2	0	2
Small-pox	3	3	0
Tonsillitis, acute follicular	27	27	0
Whooping-cough	1	1	0
Pharyngitis, acute	2	2	0
Observation cases*	42	42	0
Total Cases	223	218	5
Mortality	2.24%		

*Included in Observation Cases are:

Anomalous rashes and eruptions	6
Directly exposed cases	27
Miscellaneous cases	9
	42

These cases came from the following locations: (See Table II)

The number and variety of cases by months is recorded in Table III.

The policy of the hospital during the year has been to put into operation, as an investigation, the aseptic technic method. This method, as you well know, ignores, within three feet of the bed, the air borne theory of the spread of contagious diseases, and supports the idea that the very great majority of contagious and infectious diseases are communicated from one individual to another, or from one place to another, by means of direct or indirect contact. In other words, the infected person has come either in direct contact with the patient or with something that has, directly or indirectly, touched him.

If this idea can be proved to be correct or adequate, at once a great economic factor has been introduced into contagious hospital work. It permits of ward nursing, that is, as in a medical ward, a nurse passes from a diabetes case to a nephritis case without contracting the disease herself or conveying it to another, so, in a contagious ward, a nurse or a physician may pass from a scarlet fever patient to a measles or a diphtheria patient without contracting the disease himself or conveying it to another. In other words it means that the time of a nurse, which cannot be fully occupied by the needs of a single patient, may be utilized to care for several others. It further means that the combined efforts of several nurses, who may safely come together without fear of contaminating each other, produce greater efficiency and accordingly, I believe, a better managed hospital than could possibly be attained by the older method at a greater cost.

Our first experiment was carried out in the Palmer Ward, while the new hospital was in

process of construction. In conducting this work, we take into careful account the fact that certain contagious diseases, chicken pox and measles for example, are harder to control than others. Their contagium, while less viable, for some reason is either more easily received by individuals or is more proliferative. A case of mc, and very intelligently coöperated in conducting this simple, but, as will be seen later, successful experiment. The patient had a well marked case of chicken pox. The nurses assigned to his care, observing the technic, the details of which I will not detain you with at this time,[1] attended to the patient's needs and pass-

TABLE II.

August 8th, 1914 to July 1st, 1915.
Conditions for which they entered.

Patients entered the Contagious Hospital from the following localities.		Chicken-pox	Diphtheria	Diphtheria Carrier	Erysipelas	Erysipelas Cellulitis	German Measles	Impetigo Contagiosa	Mumps	Scarlet Fever	Septicemia	Small-pox	Pemphigus	Tonsillitis, acute follicular	Whooping-cough	Observation	Pharyngitis, acute
Chelsea	1		1														
City	37	3	7		1				1	9	1	2		4		9	
Health Service	62	4	12		2		1		25	1		1		10		6	
Homeopathic Hospital	1	1															
Hospital Waiting Room	3														1	2	
Maternity Ward	2													1		1	
Medical Ward	14																
Internal Medicine... 3			1							1						1	
Dermatology 10		1	2											1		6	
Neurology 1			1														
Eye and Ear Wards	14																
Ophthalmology 3			2											1			
Otolaryngology 11			4	1	1	1			2		1			1			
Psychopathic Ward	1	1															
Surgical Ward	9																
Men's Surgical 9			5							1				1		2	
Women's Surgical .. 0																	
Palmer Ward	68																
First Floor 17			9	2										2		3	1
Second Floor 51		16	4					3		12			1	2		12	1
Nurses Home	2								1					1			
Contagious Hospital	9																
Nurses 3														3			
Cross Infection 5		2	2							1							
Intern 1										1							
Total Cases	223	28	50	3	4	1	1	3	29	26	2	3	1	27	1	42	2

chicken pox broke out soon after the patient entered the ward. One of the isolation rooms in the ward had been arranged for carrying out the aseptic technic. The case was recognized very early, and few, if any, were exposed. Accordingly quite a favorable opportunity presented itself for our investigation. The nurse in charge of the ward, Miss Ware, had gone over the details of the aseptic technic previously with ed from the isolation room to attend to their several duties on the ward. In other words, this case was treated, with the exception of the aseptic precautions, as a ward case on the same floor with thirty to thirty-two other children. No quarantine was placed on the ward. The

1. The reader is referred to Prof. Peterson's article on The New Contagious Hospital, Journal of the Michigan State Medical Society, May 1914.

case ran a normal course, and no case of cross infection of chicken pox developed in the ward. Had this been a case of scarlet fever or of diphtheria such a result would have meant nothing, for we are all quite familiar with the fact that many individuals may be exposed to

tion I was accorded all the privileges of the hospital, and shown many courtesies by its medical superintendent, Dr. D. L. Richardson. I lived in the hospital until I was sure I understood the technic, and until my previous opposition was overcome by the evidence which

TABLE III.

Contagious Hospital Report by Months.

	Chicken-pox	Diphtheria	Diphtheria Carrier	Erysipelas	Erysipelas Cellulitis	German Measles	Impetigo Contagiosa	Mumps	Pemphygus	Pharyngitis	Scarlet Fever	Septicemia	Small-pox	Tonsillitis, acute follicular	Whooping-cough	Observation	Total	Cross Infections Occurred
August		1		1	1						1	1		1		1	7	
September		3												1		3	7	
October		1	2							1	2			2		2	10	
November	4	7				1		2		1	4		1	4		2	26	2
December	3	8						1			1		1	4			18	3
January	2	3						5			1		1	4		7	23	
February	4	1						9	1		4			2		12	33	
March	8	5						7			11					5	36	
April	6	11	1				3	3			2			3		5	34	
May	1			1				2				1		3		1	9	
June	1	9		2										3	1	4	20	
Total of	29	49	3	4	1	1	3	29	1	2	26	2	3	27	1	42	223	5
Fatality	0	0	0	0	1	0	2		0	0	0	2	0	0	0	0		0

Total number of cases including secondary diseases 223

Total number of admissions 215

Total number of secondary diseases* 8

*By secondary diseases are meant diseases developing in the hospital after admission, contracted either within or without the hospital. They are as follows:

Diseases	Contracted in hospital	Contracted outside of hospital
Chickenpox	2	1
Scarlet Fever	1	1
Diphtheria	2	1

each of these diseases without becoming infected.

Several weeks prior to this experiment no one would have condemned it, on general grounds, more than myself, but during this time, I had gone to Providence to investigate the system as practiced there. At that institu-

daily confronted me. We are indebted to our medical director, Dr. Peterson, for his tactful insistence that this method be given a trial. He had been to Providence and had seen, he returned and conquered our prejudices. Two objections to the method, which I stated at that time, I still cling to, and these are the

only ones which give me any concern in the conduct of the hospital to which I am fortunate enough to be assigned. They are: I, The danger of incubating cases among the nurses and attendants. II, The danger of diphtheria carriers among the nurses and attendants. For example, a nurse or a doctor or a medical student may not have had the disease, upon the ease of which he daily attends, he may become infected, and he may not know when, hence his incubation period cannot be watched as it would if he had aecidentally and knowingly infected himself. For example, let us suppose that he knowingly infeeted himself with ehicken pox, under this condition he would not be of danger to others for many days (let us say 12 days) after which time he could remove himself from eontact with others until the entire incubation period (16 to 17 days), is over. In the case of diphtheria, it is a well known faet that a person may harbor the diphtheria baeillus in his nose or throat and not develop the disease himself. He may, nevertheless, transmit it to those who are susceptible. Frequent eultures of the nose and throat of those exposed to diphtheria may show negative results for many days, when at last a positive eulture is obtained. The mere faet that the culture is positive compels us to admit that damage may have already been done. I believe these obstacles, however, are not insurmountable. Certainly our experience, and partieularly that of Providence City Hospital, tends to minimize in our minds the probable danger from either of these sourees. The whole question depends upon effieient technic and conscientiousness.

Let us now take up the several faetors entering into our investigation: First, the danger to those who come to the hospital to learn (medical students, visiting physicians and nurses), and those who eome to the hospital to serve (physicians, nurses and attendants); Second, the danger of patients.

First: Nurses, doctors and students enter the eontagious hospital with this thought impressed upon them, "If you get any of these diseases it is your own fault, it is a confession that you have been faulty in your technic, if you adhere strictly to every minute detail whieh has been carefully thought out, and which may seem unnecessary, you will not eontract the diseases nor will you transmit them to others." What happened from this part of our investigation? During the college year eighty students made over 800 visits to the bedsides of these highly contagious patients, not one was infeeted; thirty-five nurses served on an average of forty-six days each on the ward, none was infeeted; twenty-two doctors from the various elinies and the health serviee visited the ward, none developed any of these diseases. The three members of my staff were in constant attendance, and in elose eontact with the cases, making physical examinations, etc. My intern con-

Fig 1

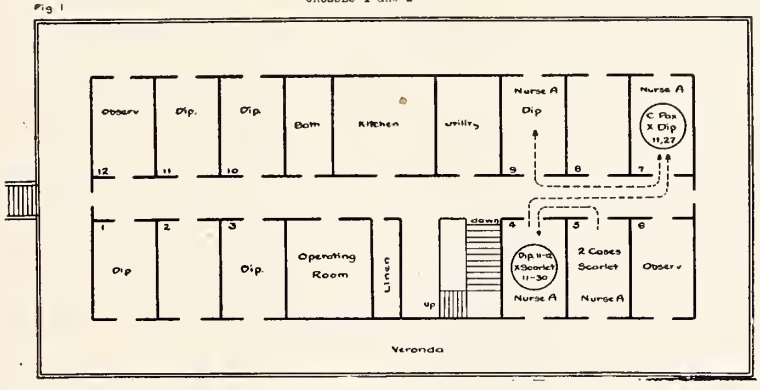
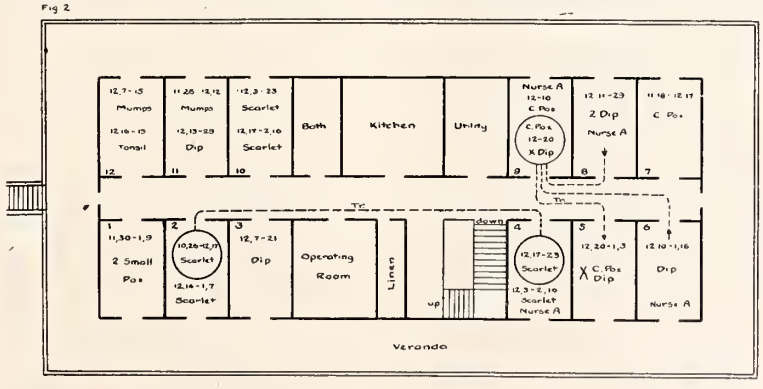


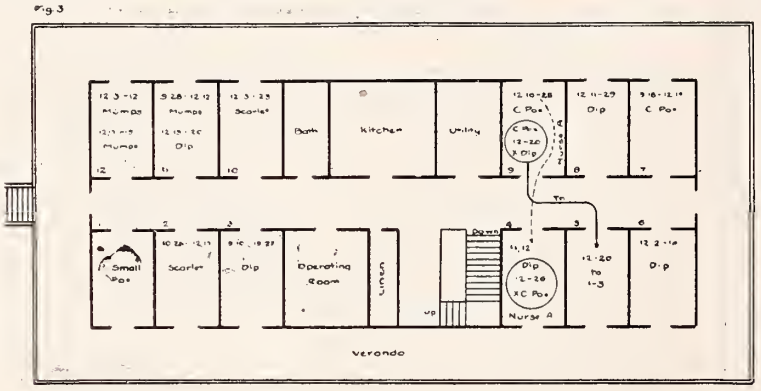
Fig 2

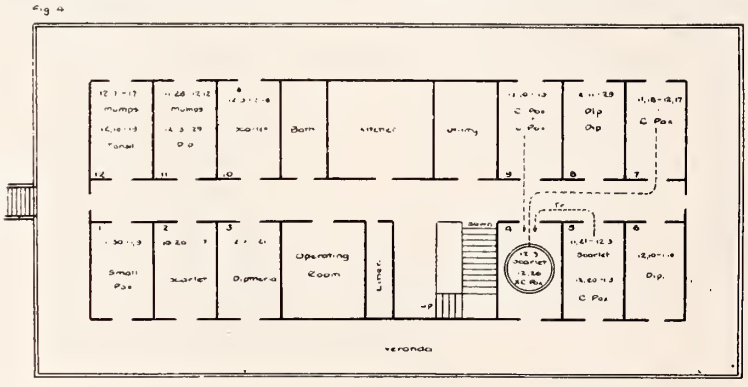


tracted scarlet fever.[2] No infection occurred in our janitor who handled all the infected linen, etc., nor in the maids attending to the cooking and general housework.

Was any disease carried from the contagious hospital to other wards of the University Hospital or to the city? We were constantly fearful that we might carry some malady to other parts of the hospital. We made a careful investigation of each case or series of cases that developed in the hospital. Fortunately it so happened that chicken pox and scarlet fever were the only diseases which required investigation. The long incubation period in the case of chicken pox, which is quite uniformly from fourteen to sixteen days, enabled us to clear up this point. For example: a child enters the hospital six days previous to its outbreak of chicken pox, inference, infection outside the hospital. A child breaks out with chicken pox fourteen to sixteen days after a case is known to have been present in the same ward, inference, infected in the hospital. With regard to scarlet fever, had this disease developed in a non-infected ward to which we were accustomed to go during our attendance upon scarlet fever patients we could not say positively that we had not carried it. In this instance, it fortunately occurred that the source of our scarlet fever cases could be either directly determined, or it could be shown that they developed at a time when there were no scarlet fever cases in the contagious hospital. Dr. Wessinger, our health officer, found no cases in the city which could be traced to an infection coming from the contagious hospital.

What might be offered as a further proof that we did not carry the disease is an illustration in my own family: I took no further precautions after leaving the contagious hospital, my 2 year old child was almost constantly with me during my time at home, she has yet to develop a contagious disease. None of the children I have attended in my practice for a contagious disease had been in contact with me within the minimum or maximum incubation period. This part of our investigation, I think, makes an unusually good showing, and it should eliminate the idea that the contagious hospital is in any way a menace.





II. The question which is uppermost in most of our minds is that of our failures. May I preface my remarks by saying: we are not wedded to our beliefs, we endeavor to enter upon our work with open minds. Criticism, if justly given, is the thing which we and all workers in this field desire the most. What degree of efficiency we may now have attained has come through a constant, friendly but serious criticism of each other, and from that

2. Onset of disease March 20. No crosses since December. Accordingly this infection was not responsible for a cross.

received from various members of the University Hospital staff. A nurse on service in the contagious hospital is compelled to reverse the order of things in other parts of the hospital, to a certain extent. She is reprimanded if she fails to see and report a fault in her superior's as well as in her inferior's technic. The idea of contamination and cross infection is never out of our minds. During the year which this report covers we have had eight cases of what we have designated secondary diseases. By this we mean diseases developing in the hospital after admission, other than those with which the patients entered; contracted either in the hospital or outside the hospital. By referring to tables II and III it will be seen that five of these cases (two chicken pox, one scarlet fever, two diphtheria) were contracted in the hospital and that all of these cases of cross infection occurred during the months of November and December, our first crowded period. The crosses were as follows:

First Cross.—Room 7, (Case 1541) Chicken pox with diphtheria. Patient entered the hospital November 19, 1914. He had complained of a sore throat before and after entering the hospital. For this reason several successive cultures were made (November 19, 26, 27) all of which were negative. The night of the 27th an exudate appeared on both tonsils. A second culture was taken this day. A clinical diagnosis of diphtheria was made. The culture proved positive. Uneventful recovery. The throat became negative before it was time to discharge him for chicken pox.

Tracing the Cross.

Room 7. There has never been a case of diphtheria in the room. The patient has not been out of his room and entered it from the outside as is the custom. The infection was accordingly brought into the room.

Diphtheria cases in rooms 9 and 4. Nurse A on these cases also cares for patient. This nurse's technic has been very faulty. The other nurse's technic is excellent. See crosses 2 and 3.

Second Cross.—Room 4, (Case 1523) Diphtheria with scarlet fever. Patient entered hospital with nasal diphtheria November 12. He developed a marked case of scarlet fever November 30. The incubation period was accordingly begun in the hospital. Uneventful recovery.

Tracing the Cross.

Room 4. There were two cases of scarlet fever in the adjoining room 5. Nurse A attending cases in this room also cares for patient. The further distribution of cases in the hospital at this time may be seen in Fig. 1.

Third Cross.—Room 9, (Case 1577) Chicken pox with diphtheria. The patient and his brother entered the hospital with chicken pox December 10 and were placed in room 9. He developed diphtheria December 20. There were diphtheria cases in rooms 8 and 6. Nurse A attending these diphtheria cases also cared for patient. Reference to Fig. 2 will show the distribution of cases in the hospital during this period.

Fourth Cross.—Room 4, (Case 1523) Diphtheria with chicken pox. Patient entered the hospital with nasal diphtheria November 12. He developed chicken pox December 26. The attack was very mild. Two cases of chicken pox entered room 9 directly across the hall December 10, just sixteen days previously. In our experience sixteen days has been the almost constant incubation period in chicken pox. The case in room 7 was not infectious at the time this patient entered the hospital. Nurse A who attended cases in rooms 9 and 4 also cared for this patient. The distribution of cases in the hospital at this time may be seen by reference to Fig. 3.

Fifth Cross.—Room 4, (Case 1545) Scarlet fever with chicken pox. Patient entered the hospital with scarlet fever November 21. Room 5. Transferred to room 4 December 3. December 26 he developed chicken pox. Sixteen days previously two cases of chicken pox entered room 9. The patient had been in the hospital thirty-five days. The incubation was accordingly spent in the hospital. This cross and cross 4 developed the same day. Inference, infected by the same means. Nurse A terminated her services in the hospital January 30.

Discussion.—It is not our purpose to lay all our cross infections at the door of Nurse A. It is rather convincing circumstantial evidence, however, that she was responsible for most of the crosses. She was not an incompetent nurse. Her work on other wards had been satisfactory. She would not, however, follow the technic of the contagious hospital and she made many serious blunders. Because of her past good record we did not dismiss her from the service. We hoped we were wrong in our judgment of her. Another source of cross infection might be traced to our night superintendent. This nurse attended to all the patients on the ward during the night, unless it was necessary to have night specials. She visited all of the patients and might have carried a disease from

one room to another. If this was the case should we not also expect to have cross infections in the south end of the building as well as in the north end where all the crosses occurred? The same argument might be applied to the intern. It is quite reasonable for us to expect that those who are the most constantly in touch with the patients are the most likely to carry infection. These are the nurses and interns.

The cross infections cannot be traced to the students because during their visits to the hospital several individuals are assigned to watch every movement they make. It is noteworthy that the students make few breaks in technic. It is also not impossible that the staff, I include myself, may have been responsible for a cross infection. I think, however, that this is less likely for reasons given before.

That cross infections occurred in no way disproves the practicability of the theory upon which we have been working. It does on the other hand show the danger we are constantly subjected to from our dependence upon the human equation. We have learned much. The most important thing we have learned is that it is not every one who can master this simple technic. Some nurses cannot compass it. As some individual perfectly sound mentally and brilliant in other lines are stupid in arithmetic or spelling, so we find nurses perfectly capable in all other ways, and willing to learn, who are absolutely devoid of the sense of contamination as applied to contagious cases.

The surgeon protects his operative field for the benefit of his patient and his hands for the benefit of himself. He pays little attention to his gown or the furniture he touches with it so long as he does not infect the field of operation. He who carries out aseptic technic as applied to contagious cases recognizes a difference. While the principles are exactly the same they go a little farther. In this instance the one observing the technic is constantly on the watch to see that he touches nothing without assuring himself that the thing he touches touches nothing else. We are all familiar with the consternation of the surgeon when some one comes in to view his operation and voluntarily assists with unsterile hands. He feels that "it is all up with the job." We experience exactly the same feeling when a person comes into our contagious fields, touches a bed with his gown, leaves the room without washing his hands, picks up the sterile chart in the corridor, leans up against the sterile wall of the corridor, and insists upon conferring with the nurse about some statement on the chart which he does not understand, and unintentionally listens so closely that he touches the hem of her garment. For us this means in the first place an attempt at diplomatic language, an effort to instruct so that the offense may not be repeated, and a gentle speed to the departing guest. But this is not all. In the second place it means that the walls must be scrubbed, the charts fumigated or recopied and that the nurse must change her uniform, because when a nurse is in the corridor she is uncontaminated. The success of the hospital depends upon these very simple, and yet at first sight seemingly complicated rules. This brief reference to the underlying principles of our technic will explain to you why we may appear ill at ease when a stranger to our methods enters the ward.

The final questions we should ask are: has the hospital under the aseptic technic method been a success; and how can the efficiency of the hospital be improved?

The report speaks for itself; 2.23 per cent. is not a high rate of cross infections. It is, however, too high. There should be no cross infections, and this is perfectly possible with perfect technic. Since the last recorded cross in this report we ran to within a few days of a year without a cross infection. That cross was chicken pox. During the most crowded time covered by the report (March and April) we had no crosses. At one time we had small pox, chicken pox, scarlet fever, erysipelas, mumps and diphtheria in the ward at the same time and no crosses occurred. I think we are compelled to say that the hospital has been a success under the aseptic technic method.

How can its efficiency be improved? More and better help and a new building or an addition to the present one. We should have one ward to isolate such diseases as chicken pox and measles. These diseases will always give us trouble. There were times during the period covered by this report when our hospital was crowded. There have been times since last June when we could not accommodate all the patients who were sent to the hospital. We should at least double our present bed capacity.

A glance at table 2 shows that the Palmer ward furnished the largest number of cases, (68) from one locality. The entire University Hospital sent 101 cases or approximately 41 per cent. of the total number of cases. The Health Service came third with sixty-two cases, forty-six of which were specific contagious dis-

eases; forty-seven of the cases from Palmer ward were specific contagious cases.

It will be seen that the Palmer ward is the greatest center of infection to the University Hospital. It always will be, for these exanthematous diseases are almost essentially diseases of childhood. It is impossible to head off the first case until it develops and then the mischief is done. For the good of the hospital as a whole it is a great mistake not to see to it that the best conditions possible be obtained for handling the cases which come to this ward, now the largest in the hospital group. We need one or two empty clean wards to which cases not exposed, or vice versa as the case may be, can be moved on short notice. These, I believe, should be the first rooms provided whether we increase our bed capacity or not.

The benefit of the hospital to the City of Ann Arbor is apparent. Ninety-nine cases, eighty-four of which were specific contagious diseases were removed from places where absolute isolation could not be carried out, and thus this many centers of infection controlled. The homes, fraternity houses, and rooming houses. from which these cases came were realesed from quarantine within very short periods and their economic loss reduced to a minimum.

The benefit to the University is also quite apparent.

To the University Hospital as a whole the advantages of the contagious hospital are hard to enumerate. At another time I hope to consider with you our methods of carrying out our work in the hospital with the hope of a free discussion as to ways and means whereby we may serve your needs more perfectly. The severest kind of a test possible, I believe, has been given the aseptic technic method in our hospital. In tracing our cross infections, air currents could be eliminated as probable factors. The prevailing winds are from the West.

In closing I wish to thank the members of the clinical staff for their coöperation and helpful criticisms throughout the year and to acknowledge the painstaking and skillful help of my former instructor, Dr. Albert A. Beifeld.

DISCUSSION.

DR. REUBEN PETERSON: We certainly are under great obligations to Dr. Cowie for this very interesting report. My interest in the contagious hospital came through my executive position in the General Hospital, and as the history of the building of the contagious unit of our Hospital is rather interesting and probably unknown to most of you, possibly I may be allowed to sketch it in a few words.

The City of Ann Arbor gave to the University twenty-five thousand dollars for the erection of a contagious hospital, the University to furnish the site and plans. At that time I do not think any of us had a very clear conception of what was needed or could be erected for the sum given. The first plans submitted were very curious in the light of what were afterward adopted. They provided for three hospitals, each entirely separate and with its own equipment, the idea being that the different contagious diseases were to be treated in their own distinct units. Among other things it was planned that the students were to gaze at and study the contagious patients in an amphitheater through a glass partition, a very different arrangement from the one Dr. Cowie has outlined this evening. There seemed to us nothing incongruous in this scheme since we had the idea that the diseases must be separated and the students protected and prevented from carrying the diseases to others. Fortunately, however, as it finally transpired, the plans had to be abandoned since they called for an expenditure of one hundred thousand dollars, four times as much as we had at our disposal.

So it fell to my lot as executive officer of the Hospital to see what could be done. In brief I visited all the large contagious hospitals in the East, and found most of them using the unit system, separating the patients with the different contagious diseases, and taking elaborate precautions against cross infection. In Providence, however, I saw a hospital where one pavilion was conducted upon the medical asepsis plan Dr. Cowie has described. So successfully had this plan worked out that I became very enthusiastic, for I saw its possibilities of adaptation to our own situation. Upon my return the plan was submitted to Dr. Cowie and the other clinicians connected with the Hospital with the result that the present contagious hospital was erected. In one way it was a great risk for it was an entirely new idea to this part of the country. We are certainly indebted to Dr. Cowie and his assistants for developing and carrying out the present technic and demonstrating beyond a shadow of a doubt that it is the right theory of treating contagious diseases in connection with a general hospital such as this.

In the old days before this hospital was built and especially in recent years when there was a great increase of patients in all departments of the Hospital, especially in the Pediatric Department, outbreaks of contagious diseases were inevitable. The Hospital had to be quarantined quite frequently which meant a great financial loss as well as great injury to the teaching in the Hospital. Some of you will remember these horrible conditions, although we are apt to forget as soon as the situation is taken care of. How abused we would feel now if we had to quarantine the Hospital for scarlet fever and do as we once did, board up the summer houses just west of the interns' home for a contagious disease ward. Even if the University had been obliged to pay twice the cost of the contagious hospital we would be better off financially because through this building we have escaped quarantines.

Dr. Cowie is correct in the statement that there will always be danger of cross infection in a hospital such as ours unless the technic be carefully carried out. The same is true in the operation room, where infection occurs less frequently because the medical profession has been educated in surgical

technic during the past twenty-five years. When a bystander poked a finger into the wound years ago, it was done through ignorance which now has almost entirely disappeared through the proper education. But physicians have not been educated in this newer medical asepsis, so essential in preventing cross infection in the contagious diseases, and commit all sorts of blunders unless they are watched. Dr. Cowie and his assistants are as much pioneers in this medical asepsis as some of us were in the old days in surgical antisepsis and asepsis.

Who has not seen nurses in an operating room apparently totally unfitted for surgical work? No amount of training will fit the doctors and nurses of a certain type for aseptic work. They may have an intellectual grasp of asepsis but their hands can not be trained to carry it out. If a nurse after a fair trial can not be taught she should be banished from the surgical and contagious services in order to safeguard the patients.

In one way it is easier to carry out the technic of medical asepsis when the patients are separated from each other merely by glass partitions or screens, since the close proximity of the patients is a greater reminder of the danger of cross infection than when the patients are in separate rooms. That the germs from these various contagious diseases are not airborne is demonstrated by our hospital where there are constant cross currents due to the doors of each room opening out onto the porch and central corridor. It was a question whether the porch should be built since it added greatly to the cost of the hospital but I think it has proved to be one of its most advantageous features.

I am inclined to think that in the future it will be much easier to disinfect the rooms by washing the walls after the latter have been properly prepared with enamel paint which lack of funds has prevented up to now. It is particularly interesting to see how in this building it has been demonstrated that no longer is it necessary to disinfect a room through fumigation, an expensive and always dangerous procedure in spite of every precaution against fire. No case of cross infection has been traced to this source although the different rooms have been used indiscriminately for the different contagious diseases. So well has the method of disinfection by washing worked that it has entirely superseded the old fumigation methods in the General Hospital, no matter how violent the case.

We shall always be in danger of an outbreak of contagious disease in the Palmer Ward for Children until Dr. Cowie's request for an isolation ward be granted. Since one cannot say positively that a child is not in the incubating stage when admitted to the Hospital, the only safe way is to keep him in the observation ward until it has been proved that he is free from a contagious disease. If our present system is continued, there will always be danger of infecting an entire ward of children since it is too late when the disease once manifests itself to prevent the exposure of the other patients.

I hope Dr. Cowie will follow this paper by another in which the technic is fully set forth, for the profession and public are intensely interested at the present time in this new method of treating contagious disease, since by this technic it becomes possible to treat a variety of contagious diseases under one roof with the minimum amount of danger of cross infection and at a minimum expense for construction of the hospital building.

Dr. Harry S. Schmidt: I well remember the difficulties we had to contend with before the contagious hospital was built. I think it would be very interesting to make note of the cross infections that occurred in the Hospital before its establishment.

Dr. Carl H. Laws: I should like to say that Dr. Cowie's report is remarkable compared with the reports from contagious hospitals, with the glass partitions. There are innumerable cases that develop between diphtheria and scarlet fever and the technic is the usual technic carried on in institutions of this order. When I first arrived here the technic seemed far stretched, but now I can see the wonders of it, the small number of cases of cross infections we do have, and what it means to carry out the technic in all its details in order to prevent these cross infections. The statistics from contagious hospitals and institutions throughout the country will show a larger percentage by far of cross infections developed under the old plan compared with the few cases that have developed under the new technic.

Dr. Cowie: I have nothing further to add except to say that I omitted to compliment the nursing staff. These nurses are doing remarkable work in the contagious hospital and each month their efficiency increases. It is owing to their careful watchfulness that the hospital has been able to make the record that it has.

With regard to the nurses breaking technic. We have a rule now that overcomes this to a large extent. Every nurse that comes to the contagious hospital is put on probation. She serves two weeks. If her technic is not good, it is asked that she be assigned to some other service. We have had to put this rule into operation more than once.

REPORT OF A CASE OF DIBOTHRIOCEPHALUS ANEMIA.

Harry B. Schmidt, M.D.

(From the Department of Internal Medicine, University Hospital, Ann Arbor, Michigan.)

This patient is a Finnish woman. Her color and panniculus in no way differs from that seen in cases of pernicious anemia. The fact that she is Finnish led us to suspect that she might possibly have a bothriocephalus infection. We have been looking for this infection here for a number of years, and I am not aware that there has ever been a case of the kind in the Hospital before. We found many eggs in her stools, four or five to a field. Previous to the stool examination, we examined a blood smear and Dr. Gilbert and I both concluded that it was not typical of pernicious anemia. One of the interesting features to me was the absence of an eosinophilia.

She is 38 years of age and came to this country fifteen years ago. The present trouble began in March, 1913 following the drowning

of her son. At that time she saw his remains removed from the water and suffered a hemorrhage from the nose, then became unconscious. Following this she was very weak and had to take to her bed. There was a gradual recovery from these symptoms, but since then she has noticed shortness of breath, palpitation of the heart, roaring in the ears, occasional dizzy spells and increasing pallor. There are no stomach complaints, diarrhea nor constipation.

Upon examination, the patient shows a pronounced pallor of the mucous membranes and skin, together with a lemon yellow color, which is most marked over the face. There are no other evidences of disease except a slight increase in the heart rate and hemic murmurs.

Blood examination: red cells 810,000, white cells 7,500 and hemoglobin of 20 per cent. Color index is less than one. Differential count of 200 cells shows 23 per cent. small lymphocytes, 3.3 per cent. large lymphocytes, 6 per cent. transitionals, 45 per cent. polymorphonuclears, 2 per cent. eosinophiles, 11 per cent. neutrophilic myelocytes, 3.5 per cent. normoblasts, 6 per cent. megaloblasts, marked poikilocytosis and some anisocytosis and marked polychromasia. The size of the red cells are normal or below normal, no macrocytes seen.

The urine is negative. Systolic blood pressure 178, diastolic 90. Wassermann reaction was doubtful.

This disease is rare in North America although we live in a locality where Nickerson, the first in the United States to study it carefully, reported that the infection most frequently occurred in the Great Lakes region. There are very few cases reported in the literature. It must be that many have failed to report their cases so that this would be the reason for its apparent rarity.

The disease is not rare around the Black Sea, in Russia, Finland and Switzerland. It is the commonest tape worm found in Japan. The infection is obtained by eating raw or smoked fish and I understand that this is a common occurrence among the foreign population in the Upper Peninsula of this State. In America the disease is almost invariably found in foreignors, the majority of whom are Finlanders.

Dr. A. S. Warthin of the University of Michigan has reported the infection of fish with the bothriocephalus cysticercus and has also noted the disease in native Americans.

The bothriocephalus was first observed in this country by Dr. Walker in 1879, and since then numerous cases have been reported, mostly around the Great Lakes region. This worm is the longest of any of the tape worms. Wilson has reported a case of multiple infection, one of the worms measuring eighty-three feet, two inches in length.

The symptoms of the disease as described in most textbooks are variable. There is hardly a subjective symptom described which has not been at sometime or another attributed to this infection. Many books on clinical microscopy and medicine state that the blood picture may be identical with that of pernicious anemia. I take exception to these statements. I can find no instance in the literature of a case with an anemia exactly resembling pernicious anemia. The diagnosis is made on the high color index, polychromasia, poikilocytosis, anisocytosis and large numbers of nucleated red cells, the majority of which are usually megaloblasts. The diagnosis of pernicious anemia cannot be made upon these findings alone without question.

Many cases of pernicious anemia are seen in this Clinic each year and I have yet to find a case which did not have large numbers of macrocytes in the blood on every examination. The finding of large numbers of megaloblasts in the anemia, due to the bothriocephalus is the rule; however, one will observe that this occurs when the anemia is taking a progressive downward course. Directly the opposite happens in pernicious anemia. When the hemoglobin and red cells are on the incline, nucleated red cells are seen in showers.

This patient has the achlorhydria so often described as accompanying pernicious anemia. The paraesthesias and other nervous phenomena found in this disease, due to posterior lateral sclerosis, are absent in this case. I have been unable to find an instance in the literature where this lesion was described as due to the bothriocephalus infection or to the anemia accompanying it.

The absence of an eosinophilia which is common to this disease, interested me particularly. In trichinea infection the eosinophiles do not appear until after the disease has reached its apex. It is not uncommon to find high percentages of these cells in the blood after the patient has recovered from his illness or at least from the symptoms accompanying it. An absence of eosinophiles in the blood has also been described in the late stages of the most severe forms of secondary and primary anemias, and some authors claim that the eosinophiles reappear during the stage of recovery and state that this is a good prognostic sign. I was sorry that this patient left the Hospital before we

could determine the possibility of an eosinophilia during her convalescence after the worms had been removed.

Following the usual treatment with aspidium, we recovered four worms from this patient. I will pass the specimens around for your inspection. You will observe that the rosette shaped uterus which so easily distinguishes this worm from all other tape worms is conspicuous, also that the heads are very tiny as compared to the head of the tenia saginata.

I might state that the low color index here observed, is not uncommon in cases of pernicious anemia whenever the red cells are below a million per cubic millimeter, also that we have no reason to suspect that the patient acquired her infection here in America.

DISCUSSION.

Dr. Frederick A. Waldron: How do you account for the positive Wassermann?

Dr. Schmidt: The Wassermann in cases of severe anemia, especially anemias due to a toxic substance, are usually positive.

Dr. D. Murray Cowie: Has it been determined whether the eosinophilia in the case of this worm is an anaphylactic affair as it is in the case of some other worms?

Dr. Schmidt: The disease is so rare in this country that not many cases have been studied by one man.

PUERPERAL INVERSION OF THE UTERUS; REPORT OF A CASE.

R. A. Bartholomew, M.D.
(From the Clinic of Obstetrics and Gynecology, University Hospital, Ann Arbor, Michigan).

Puerperal inversion is an occurrence of particular interest on account of its infrequency and seriousness. Probably the best source of material for the study of this condition is to be found in Thorn's article, "On Inversion of the Uterus," which is based on a critical study of 627 inversions of the uterus collected from the world's literature from 1887 to 1909. Of these, 543 occurred in connection with pregnancy, 83 cases with tumors, and 13 idiopathic.

Frequency.—While all authorities agree that puerperal inversion is a very rare complication, the figures as to its frequency vary within rather wide limits. Zangemeister on the basis of Thorn's statistics estimated the condition occurred about once in 400,000 labors, assuming that the seventy-six inversions reported from 1887 to 1909 in Germany represented the great majority of the cases. Not a single case was found in 250,000 labors in the St. Petersburg Lying-in Hospital, and the condition was observed but once in 190,833 deliveries in Dublin. Inasmuch as the condition is quite readily diagnosed, and is almost certain to come to notice, on account of the severity of the symptoms, both in the acute and chronic stage, it is probable that these figures fairly well represent the frequency of inversion. It is well to bear in mind the extreme infrequency of the complication for this fact alone is certainly not in accord with the prevailing conception of the causative factors.

Etiology.—It has not been possible as yet to assign any one important factor as the cause of the condition. In considering the numerous factors commonly mentioned in the etiology it will be convenient to consider them from the standpoint of predisposing and exciting causes.

According to Thorn, the most important predisposing cause is to be found in the fundal attachment of the placenta. Out of 191 puerperal inversions of the area of attachment of the placenta to the uterus was observed in forty cases, in thirty-three of which the placenta was specifically mentioned to be attached to the fundus. This particular area of the uterus, already more predisposed to inversion, by its location, than the rest of the uterus, would have an increased tendency in this direction due to the increased vascularity and softening at the placental site. Furthermore, if there is any tendency for the placenta to remain adherent over a small portion, the contractions of the uterus in attempting to expel the partially separated placenta, would tend to pull down on this weakened area and bring about partial inversion. Similarly the uterus would have a tendency to contract upon the partly inverted fundus, in much the same way as upon a foreign body and attempt to expel it, thereby completing the inversion. A striking analogy to the action of the uterus, upon a partially separated placenta, attached to the fundus, is seen in the fact that in the eighty-three cases of inversion of the uterus, with tumors, seventy-nine were found to be myomas, and in sixty-three of these the attachment of the tumor to the uterus was in the fundus. It is also noted that inversion of the uterus is almost three times as frequent in primiparae as in multiparae, and is possibly explained by the fact that due to the more complete approximation of the walls of the cavity of the virgin uterus the fertilized ovum is more apt to become imbedded near or at the fundus. On similar grounds it has been thought that the increased frequency of placenta previa in multiparae may be accounted for by the greater separation of the walls of the uterine cavity, thus favoring a

lower attachment of the ovum. Normally, the placenta is attached to the anterior or posterior wall of the uterus, and only exceptionally to the fundus.

The exciting causes are traction on the cord, or pressure from above on the fundus. Traction on the cord may be due to the cord being absolutely short, in which case the placenta is inevitably pulled upon as the child is born, or before the cord is cut. The cord may be relatively too short, due to an abnormal number of coils about the child, or in case birth occurs with the mother in a standing position. In many cases the responsibility appears to be with the attendant who pulls upon the cord to deliver the placenta. Probably even in these cases there would be no resulting inversion unless the placental site were in the fundus and the uterus in a relaxed condition.

Pressure from above on the fundus may be an exiting cause, as for example in the Credé expression of the placenta, attempted while the uterus is in a relaxed condition with a placenta which may or may not be situated in the fundus. In a number of cases reported, the exciting pressure has merely been that brought about by coughing, sneezing, micturition or straining at stool during the puerperium. Thorn holds that in such cases there has already existed a partial indentation, or inversion since the labor, and one of these factors completes the inversion. His theory is supported by the fact that a noticeable indentation of the fundus has been palpated and known to remain for a considerable length of time before correcting itself spontaneously.

Thorn believes that there has been a tendency to overemphasize the importance of errors in the conduct of labor, and that if traction on the cord, either intentional or unintentional, and undue pressure from above on a relaxed uterus were of primary importance, then the condition would be more frequent than satistics show. It is also significant that out of 437 cases only 154 were violent, that is, due to traction on the cord or pressure on the fundus; 180 were spontaneous, and as nearly as could be judged from the description, independent of manipulation, and in 103 the question of the inversion being spontaneous, or due to violence, was uncertain and not stated definitely. Beckmann, quoted by Thorn, found twice as many spontaneous as violent in his statistics. The mere fact that in a large proportion of the cases the labor has been conducted by midwives who have presumably erred in their technic does not have so much significance, when one realizes what a large proportion of labors are still conducted by midwives. It is only too easy to put the blame on the midwife and base it upon hearsay evidence. There is no evidence to show that the condition is becoming any less frequent than formerly with continued improvement of obstetric technic. The inversion has been known to recur one or more times in subsequent labors in the same patient as though there was a special predisposition to inversion in some cases, possibly due to abnormal structure of the uterus, as for example, in arcuate uterus. It would seem important to make a special investigation of some possible pathologic structure of the uterus whenever such a specimen can be obtained in cases that come to autopsy. There are a number of cases on record in which inversion occurred at the first labor, and in a subsequent labor, in spite of the knowledge of the previous complication and in spite of all precautions to prevent its recurrence it has happened again. Carruthers has reported such a case.

Clinical Course and Diagnosis.—The occurrence of the inversion is usually accompanied by very definite and marked symptoms but strange to say in a large number of cases there have been no symptoms whatever or else of so mild a type as to make an examination unwarranted. In Thorn's statistics there are statements in 191 cases as to the time of the diagnosis of the inversion. In 19, the inversion appeared directly after the birth of the child; in 44, directly after the expulsion of the placenta; and in 141, up to the twelfth hour. Undoubtedly the diagnosis would have been made much earlier in many of these cases had there been symptoms marked enough to have suggested an abnormality.

The occurrence of the inversion in the more typical cases is manifested by severe pain, and the patient rapidly passes into a state of profound shock, accompanied by more or less hemorrhage from the uterus. However, the shock is usually far more marked than would appear to be caused by the amount of hemorrhage. It is the hemorrhage, and especially the shock, which constitute the immediate dangers to the patient. Such symptoms lead to, or should lead to, an examination at once, and the body of the uterus may be found to have disappeared from the lower abdomen. It is often possible to palpate the inversion funnel and carry the hand down into the depression, noting its circular rim. The inverted body of the uterus may be discovered protruding from, or situated entirely outside the vagina between the patient's

thighs. On vaginal examination it may be felt filling up the vagina and bulging the perineum, the openings of the tubes may be seen or felt, and on passing the fingers along the mass toward the vault of the vagina, the soft cuff of cervix may be felt encircling the mass. There is apt to be a continual oozing of blood from the surface of the mass. The placenta, if not previously expelled, is found adhering to the surface of the mass.

Treatment.—Before taking up the treatment it is important to consider what may be accomplished in the way of *prophylaxis*. It is worth while to re-emphasize the possible dangers of making any traction whatever on the cord after the child is born, and to take measures against traction on an absolutely, or relatively short cord at the end of the second stage of labor. Also there is the possible danger of carrying out a vigorous Credé method of separation or expulsion of the placenta with the uterus in a relaxed condition. The uterus should always be made to contract before subjecting it to pressure from above, for it is doubtful whether a firmly contracted uterus can be inverted. It is important to follow the uterus down with one hand while the child is being born, but to avoid any unnecessary manipulation, or stimulation of the fundus until there is evidence of the spontaneous separation of the placenta as may be judged from the contraction and rising up of the fundus along with a slipping out of the cord from the vulva, and usually the appearance of a dark bloody discharge. Slight pressure on the fundus will induce an advance of the cord which will not recede on release of pressure if the placenta has separated. More important still is the recognition of the beginning stage of the inversion as may be seen from the reported case, and also others in the literature, for example that of Carruthers. If the hand rests on the fundus any peculiarity of its contour may be readily recognized except in case of very heavy abdominal walls, or a full bladder. The beginning inversion is practically always in the fundus, and the presence of a firm transverse ridge, high up on the body of the uterus is very suggestive. Above this ridge there may or may not project a portion of the fundus much the same as a rubber nipple may be partially inverted, leaving the end still projecting slightly beyond the level of the reflection. If such a structure can be palpated an inversion is threatened, and I do not think the attendant is justified in continuing further efforts by pressure from above but should quickly undertake a manual removal of the placenta before the inversion progresses any further. Such a procedure would certainly be less dangerous to the patient than the inversion. Even with a beginning and only partial inversion there may be a greater degree of shock and hemorrhage present than could be accounted for in any other way, as may be seen in the reported case. Thorn mentions similar findings in a case, and, believing that an inversion was threatened, made pressure in the reverse direction from the symphysis toward the promontory of the sacrum with successful result.

The treatment commonly advised in most textbooks is that of an immediate manual replacement of the uterus, and the fact is almost ignored that in a large number of cases the shock and hemorrhage may demand much more urgent treatment than the inversion itself. Zangmeister, from a study of Thorn's collected cases, strongly advised treating the shock and hemorrhage first, and choosing a time from one to twenty-four hours after the occurrence of the inversion to replace the uterus. In support of this idea he quotes the following statistics based on 158 of Thorn's collected cases:

	Failures	Deaths
Reposition at once	24%	23%
Reposition after 1-24 hours	14%	0%
Reposition after 1-14 days	40%	20%

Such statistics point very clearly to the great advantage of waiting one to twenty-four hours and not replacing the uterus at once.

Allman, however, not willing to grant such absolute deductions made an independent study of the same statistics covering 268 cases with entirely different results:

	No.	% Fail.	% Deaths
Reposition at once	139	13.6	20.1
Reposition after 1-24 hours	23	13	30
Reposition after 1-14 days	34	35.3	20
Reposition after 14 days	72	56	6.9

In other words, reposition after 1-24 hours had not only fully as many failures as if done immediately, but the mortality was 30 per cent. instead of 0 per cent.

In order to discover, if possible, how such a difference could be accounted for, regarding such an important phase of the treatment, I made an independent investigation of the same statistics from Thorn covering 255 cases with results corresponding very nearly to those obtained by Allman:

	No.	Fail.	Deaths
Reposition at once	131	12%	22%
Reposition after 1-24 hrs.	20	15%	25%
Reposition after 1-14 days	31	23%	22%
Reposition after 14 days	73	59%	4%

The difference in results between the last two tables and the first one might easily arise according to the interpretation of the abbreviation, p. p. (post-partum) used in Thorn's table, to designate the time of the discovery of the condition, but the inference in these cases was that reposition was attempted at once after the diagnosis was made following delivery.

From this, it would seem that, contrary to Zangemeister's results reposition undertaken 1-24 hours after delivery, has an even higher percentage of failures and deaths than if done immediately. The fact probably is that some cases of inversion are accompanied by very little shock or hemorrhage, and in these there is no contraindication to immediate replacement. In others there is a profound degree of shock when the inversion takes place, and if immediate replacement is attempted, there is added to the original shock a further amount caused by the replacement, and thus the patient is overcome. This is well illustrated in the case reported.

Phillips collected 184 cases of acute puerperal inversion. In 79 in which the uterus was immediately replaced in the presence of marked shock, 24 or over 30 per cent. died. In 23 cases, in which it was definitely stated that there was no shock, immediate replacement resulted in recovery in each instance. In one case it was specifically stated that replacement was purposely postponed until the severe shock had passed off, and this patient recovered.

If shock is present the replacement should be postponed and the shock treated by the usual restorative measures. If the amount of hemorrhage is threatening during this time it may be readily controlled by constricting the uterus just below the cervix with a piece of sterile rubber tubing, using just enough pressure to control the bleeding and not shut off the blood supply to the rest of the uterus. Such bleeding, not being controlled, would further increase the shock, and might account for the increased mortality in replacements postponed for a short time. The absence, or slight amount of the hemorrhage in many cases, is explained by the constricting effect of the inversion at the lower segment. This may be marked enough in some cases to lead to gangrene of the uterus. Tamponing with gauze may be sufficient in some cases but in others constriction is necessary.

After the patient has recuperated, replacement should be attempted. In any case it should be done under anesthesia to secure as complete relaxation as possible and lessen the danger of shock to some extent. If the placenta is still adherent it should be removed before replacement is attempted, thus making a smaller mass to be pushed through the constricting ring above. The separation of the placenta may set up contractions which should be allowed to subside before attempting replacement.

As to the actual technic of the replacement, there are almost as many methods recommended as cases of inversion. All may have their special advantages, and what would be suitable in one case would be unsuccessful in another. In any case care should be observed to press with as broad a surface of the fingers as possible to avoid perforating the uterus and not to use much force if the uterus is in a state of contraction. The replacement proceeds more easily and rapidly when the muscle is relaxed. The hand should be left in the uterus until the latter is felt to contract firmly and maintain its normal contour. In case of persistent tendency to reinversion it should be packed. After the immediate danger of hemorrhage and shock is passed, there is the possibility of sepsis favored by the exposed endometrium and the manipulations, sometimes carried out with uncertain asepsis. However, the mortality from sepsis is much less than that from hemorrhage and shock. The more chronic the inversion the more difficult it becomes to replace manually, and in such cases the replacement is more easily and quickly performed by operation, the technic of which is fully described in an article by Dr. Peterson, published in *Surgery, Gynecology and Obstetrics,* August, 1907, pages 196-213.

The following is the report of a case which recently occurred in the Maternity Hospital:

The patient, O. L. 22 years of age, was a primigravida; rather large build, physical condition good, pelvic measurements fully normal, urine and Wassermann negative. Family history and personal history negative. Menstrual history normal, last period probably March 15, 1915; course of pregnancy normal and uneventful. Pains began about 3 a. m. January 7, 1916 and were soon established regularly at five minute intervals. At 9:30 a. m. abdominal examination showed the position to be O. L. A., head well engaged, fetal heart 135 per minute, and the pains coming at three to four minute intervals, and lasting about forty-five seconds.

Rectal examination showed the cervix one-third dilated, and the membranes unruptured. Progress continued rather slow, but at 2 p. m. rectal examination showed the cervix fully dilated. Very soon after this the membranes appeared at the vulva and were artificially ruptured. At 2.45 p. m. there was beginning crowning which continued steadily with each pain until at 3:30 p. m., when the head was delivered between pains with the patient under the obstetric degree of anesthesia. There was no coil of cord around the neck, and with the next pain the child was born in the usual manner. It was a healthy appearing male infant, weighing seven and one-half pounds and cried at once after birth. The fundus was followed down with the hand as the child was born and remained of normal contour and consistency. There was no bleeding and the fundus required no manipulation nor stimulation. After waiting about five minutes the cord was tied and cut and the child removed. A moderate amount of pressure was then made on the fundus but apparently the placenta had not yet separated as the cord receded at once with release of pressure. The effort was not continued but the patient was anesthetized, and a rather severe second degree laceration repaired in the usual manner. A moderate bleeding was noticed which became more marked after the repair. There were as yet no definite signs of separation of the placenta, and with release of pressure on the fundus the cord receded each time. It was remarked that the upper portion of the uterus seemed somewhat wide on palpation. There continued to be an abnormal amount of hemorrhage but efforts to express the placenta by the Credé maneuver were unsuccessful. It was soon deemed necessary to do manual removal of the placenta and the usual preparations were made. A final attempt at expression was made, however, before resorting to manual removal, and at this time about 4:15 p. m. it was noted that the patient appeared in a eondition of moderate shock, with pallor, shallow respirations and a pulse of 130-140 and of rather poor quality. On palpation of the fundus a definite thick transverse ridge could now be felt just below the fundus and too high for a contraction ring, the fundus projecting somewhat beyond the level of the ridge. This peculiar finding was discussed at the time and was probably the beginning of the inversion but was not reeognized as such. With another effort at expression, with the uterus only moderately firm, the placenta appeared at the vulva, coming out by the Schultze method. It was noted that it was very hard to find the fundus after the placenta appeared, but this was attributed to the straining efforts the patient was making at that time. The placenta appeared to be intact, and although the cord was not measured, it was of the usual length. However, the bleeding continued and one hypodermic of ergone was given. In trying to locate the fundus the perineum was noticed to bulge as though another head was about to appear. At this time the patient was in serious condition, pallor very marked, pulse 160 and almost imperceptible at the wrist. Vaginal examination was made at once, and revealed a large round, thick, dense mass presenting at the vulva bulging the perineum, and completely filling the vagina like an immense polyp. No eervical rim could be felt until the examining finger was carried far up into the fornix, and then the condition was clearly recognized as inversion of the uterus. The patient was put more fully under anesthesia and after a preliminary cleansing of the parts the inverted fundus was pushed up, with the back of the flexed fingers of the right hand, the pressure controlled by the left hand on the abdomen until the fundus was nearly on a level with the cervical ring. At this time, by abdominal palpation, the inversion funnel eould be easily recognized and outlined with the fingers; meanwhile ten ounces of saline solution were being given under the right breast. Further pressure was now made on one side of the inverted part, at the level of the reflection, in an inward and upward direction with the back of the flexed fingers, and the fundus was soon felt to resume its normal position by a rather sudden jerk much as the indentation in a rubber ball suddenly disappears. The replacement was accomplished after about five minutes' effort, and it was noted that whenever the musele contracted it was very difficult to continue the replacement. With massage the uterus was felt to contract down and the hand was slowly withdrawn. The patient appeared to be past aid by this time. No radial pulse could be felt, and by stethoscope the heart rate was 180-190 and weak, respirations very shallow and weak. She was given one cubic centimeter of pituitrin intravenously, also adrenalin ten minims of a 1-1000 solution, ergone, one hypo, which was soon repeated, then ten ounees of saline solution under the left breast, and morphine grains one sixth hypodermatically. She was surrounded by hot water bottles and the feet held in an elevated position. Within fifteen minutes she reacted and improved steadily. One-half hour

later she was put to bed with a pulse of 140. She was very thirsty, and water was freely given in small quantities as she retained it well. Thereafter, there was daily improvement, and although the puerperium was complicated by a mild sapremia with foul discharge and moderate temperature, involution was satisfactory and the laceration healed well. The patient was allowed to go home on the sixteenth day. It was noted on examination at that time that the fundus was in normal position but could be displaced very easily.

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DISCUSSION.

Dr. Reuben Peterson: There is very little to add to this very complete paper. It is the only case we have had in the Maternity Service since 1901. While the condition is uncommon, like any other obstetric complication, one may be so unfortunate as to meet with one or more cases in practice, hence he should have definite knowledge as to the causation and treatment of the condition.

I do not believe the accident in the case reported occurred from any error in technic but rather from some anomalous condition in the fundus of the uterus which resulted in the inversion. Certainly the Credé method of delivering the placenta cannot be responsible for the accident, when one considers the thousands of cases where this method is employed by anything but skilled hands yet with no resulting inversion. The same is probably true of the method of delivery of the placenta by pulling on the cord, since this is a common practice among midwives, yet inversion even in their practice is uncommon. However, it is well to bear in mind that all procedures such as excessive pressure on the fundus or pulling on the cord should be avoided, since such methods plus an abnormal softening of the upper part of the uterus may bring about inversion.

Dr. Bartholomew's statistics are exceedingly interesting and instructive and bear out his contention that each individual case of inversion must be judged by itself so far as treatment is concerned. It is quite possible that his patient was not in as serious a condition as he supposed, i. e. she probably had good recuperative powers because the hemorrhage was not excessive and the cause of the shock was soon removed. While it is probably best to wait awhile in the majority of cases of inversion until the shock can be overcome, there is danger in waiting more than a few hours, so rapidly does the uterine muscle contract, making it much more difficult to replace the uterus. This difficulty is increased if ergot has been given to control the hemorrhage. The latter can be quite easily curtailed by packing or by employing the method of constriction described by the essayist but the danger of sepsis through packing must ever be borne in mind. If one is obliged to wait longer than twenty-four hours after the accident, it probably will be better to wait until after the fourteenth day of the puerperium. Then, as the statistics show, replacement can be made by operative procedures with a low mortality. This is undoubtedly due to the fact that sepsis is much more prone to occur earlier in puerperium.

While the case reported is an acute, not a chronic inversion of the uterus, it may not be out of place to state that the operative treatment of the latter condition has been quite thoroughly worked out. The purpose of the various methods is to cut the constricting cervical ring and enough of the uterine wall to allow of replacement of the uterus. The cervical ring can be split from above through an abdominal incision, or from below either anteriorly or posteriorly. I have had two such cases where the replacement was made by incising the ring and uterus anteriorly. Both these women, one of whom had had chronic inversion for eleven years, made good recoveries.

It must be remembered also that if the woman does not die from hemorrhage or sepsis, she can live years with chronic inversion of the uterus. After the publication of my article in which were reported the two cases mentioned above, I had letters from quite a number of physicians citing cases they knew of where the accident had occurred ten, twenty or more years previously. Yet the women had lived in comparative comfort except for excessive hemorrhage at the menstrual periods.

Dr. Bartholomew: I might remark upon the fact that the laceration was repaired before the placenta was expressed. The manipulations in replacing this inverted fundus did not seem to make any difference with the repair and the union was as good after the tenth day as if the patient had not had the parts stretched as they must have been in this manipulation. I must confess that the discovery of this condition was entirely unexpected and unlooked for. It is infrequent enough so that one is not apt to be well posted on the findings and the treatment, especially when there are such misleading statements made in the books as to what should be done, and it is up to each one as a matter of fact to work out his own procedure, according to indications, when such

an emergency occurs. But with more frequent reports of the condition and more agreement upon what should be done, the statistics in regard to the deaths ought to improve.

DR. FREDERICK R. WALDRON: What would be done in case you find a transverse ridge? Would you use ergot?

DR. BARTHOLOMEW: I believe I would stop all manipulations whatever from above and would remove the placenta manually from below and at the same time stimulate with the hand inside until I felt the uterus contract down and when the hand is withdrawn give ergot to keep the uterus in tonic contraction.

LANTERN SLIDE REVIEW OF THE MONTH'S RADIOGRAMS.

JAMES G. VAN ZWALUWENBURG, M.D.
(From the Department of Roentgenology, University Hospital, Ann Arbor, Michigan).

The slides shown were as follows:

1. Four stages in the treatment of osteomyelitis of the tibia with regeneration.
2. Brain tumor.
3. Old surgical defect of the calvarium.
4. Two cases of atrophic arthritis of the shoulder.
5. Transverse fracture of the os magnum.
6. Three cases of primary hemorrhage in tuberculosis.
7. Lung syphilis.
8. Old and extensive tuberculosis of the lungs, with a provisional diagnosis of carcinoma glottidis.
9. Advanced tuberculosis of the lungs, accepted by two life insurance companies within the past year.
10. Epigastric hernia.
11. Situs transversus.
12. Twin pregnancy.

The cases listed under (6) are of unusual interest. These cases all originated in the University Health Service. In two, the hemorrhagic sputum was obtained and shown to contain tubercle bacilli in small numbers, while all subsequent examinations were negative. In the third case, the hemorrhagic sputum had been destroyed, but that obtained at a later slight hemorrhage gave similar findings. No symptoms suggestive of the disease were given previous to the hemorrhage, and apart from the signs due to the presence of fluid in the bronchi immediately after the hemorrhage, the physical examinations were negative. The stereoscopic roentgenograms also failed to disclose the pathology.

The explanation offered by the roentgenologist is that a small ulcerative lesion in or near the bifurcation and well within the normal hilus shadow has given rise to this unexpected hemorrhage. This area is not open to roentgen observation as is the rest of the lung because of the normal density in this region and the wide physiologic variation in the extent of this shadow. This is, of course, well known. It is not so commonly known that a small lesion in this area may go to ulceration and hemorrhage before microscopic lesions appear in the periphery of the lungs.

These cases emphasize the necessity of obtaining the *hemorrhagic sputum* for microscopic examination to make a diagnosis.

In connection with the case that had successfully passed two life insurance examinations in the past year (9), the comment was offered that we were all paying this man's premium. The system is manifestly unjust that obliges the good risk to pay a premium sufficient to cover the extra hazard of a risk such as that shown, when an adequate examination would have shown the presence of cavities in both uppers and extensive involvement throughout both lungs. A little publicity in the matter of the usual perfunctory insurance examination might be in the interest of the public.

Fermented Milk.—While there is no conclusive evidence that Bacillus bulgaricus is able to establish itself in the intestine in such a way that other bacteria are driven out, it is undoubtedly true that in many cases marked improvement has resulted from the ingestion of milk culture made from it. It is by no means certain, however, that the results which have been obtained by the use of milk cultures have been attributable to any peculiar virtue in the organism itself. The beneficial effects of a sour-milk diet is attributable, perhaps, not so much to the bacteria contained in the milk as to the milk itself, which provides material for an acid fermentation in the intestine. Fermented milk is so well tolerated in many cases that their use should in general be encouraged from the standpoint of nutrient values, quite apart from the problematical "autointoxication" propaganda (*Jour. A.M.A.*, Feb. 19, 1916, p. 574).

Genoform.—Genoform, advertised as a remedy for rheumatism, gout, neuralgia, etc., is marketed with the claim that it is split up in the intestines into salicylic acid, acetic acid and formaldehyd. The statement of composition is too indefinite to permit any real insight into its possible reactions, but even if formaldehyd is liberated in the intestines, genoform could not have the properties which are claimed for it (*Jour. A.M.A.*, Feb. 26, 1916, p. 676).

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May

Editorials

WHY EVERY MEDICAL MAN IN MICHIGAN SHOULD ATTEND THE A. M. A. MEETING.

The reasons why every medical man in Michigan should attend the A.M.A. meeting are many, and should be convincing. In the first place no medical man can attend these meetings without learning something. He will learn something which will be of value to him in his practice. He will go back to his constituency better prepared to practice his profession. The section meetings of the American Medical Association are thoroughly scientific and up-to-date and instructive. It has been my good fortune to attend medical meetings in nearly every part of the civilized world. I know of no more progressive, scientific and valuable meetings than those of the different sections of the A.M.A. In each section one will hear the latest phases of the special subject discussed by men eminently qualified to do so. The only trouble that one has in attending these meetings is that there is an embarrassment of riches. There are so many good things going on at the same time that one is at a loss to know which way to turn. He sometimes finds himself much in the situation of the fabled ass who, finding that he was equidistant from abundant food on each side, starved to death before he could decide upon which way to go. The papers and the discussions in the different sections are certainly worth hearing, and possibly worth participating in. One may get valuable material himself and at the same time carry information to others.

Next in importance to the meetings of the sections, I would place the scientific exhibit. Here one finds that the latest devices, the most important instruments of precision, every mechanical help in diagnosis, the latest chemical studies, all so arranged that he who runs may read. If the meetings of the A.M.A. did nothing else than bring together the wonderful and valuable scientific exhibits which have marked these meetings for the past few years, it would fill an important function and would justify every medical man in attending. There you will find the latest microscopes, microtomes, optical instruments, blood testing apparatus, in short everything which the doctor uses. One cannot afford to miss these demonstrations. Even when the exhibit does not directly concern one's special line of practice, he learns much which increases his value as a physician; he becomes a better man and a better practitioner.

Closely connected with the scientific exhibit one will find the display of new books, new journals, new monographs, everything new from the press which may be of benefit to the medical man. In this way one is able to keep himself in touch with the times, and the doctor who falls behind the times is soon irretrievably lost. No one finds this out quicker than his intelligent patients. The intelligent people of a community will appreciate the doctor's going to the meeting of the A.M.A. They will think he is likely to learn something there which will make him a more capable and efficient practitioner of medicine. The commercial exhibits are also of great interest. The medical man is never able to get entirely away from the manufacturers. He will see what the manufacturers of instruments and the manufacturers of medicines are doing. Besides these, there are displays of charts illustrating the work of preventive medicine, showing how this disease and that has been reduced, what measures have been taken, how to secure better water and better air. School hygiene is usually well illustrated and from these exhibits the doctor returns to his home with much which he may utilize in the prevention of disease. While credit for this comes slowly from the public, it is coming surely. No physician in Michigan can afford to miss the scientific sections, the scientific exhibits, the exhibits in preventive medicine work, even the commercial exhibits

which will be at his service at the meeting in Detroit in June.

There are many other reasons why the doctor should go to the meeting. He will meet with many friends, he will make many new friends, and from many of these he will learn more or less of value. He will see and hear men whose books and articles he has been reading for years, and in their presence he will be able to form a more just estimate of their real value. No one can live to himself alone, especially is this true of the practitioner of medicine. He cannot stand still intellectually. He either retrogrades or progresses, and in order to progress he must come in touch with the best that there is in the profession, and this he will find at the meeting of the American Medical Association.

There are still other important reasons why every medical man in Michigan should attend the A.M.A. meeting. The intelligent people in your community expect you to do so. They demand that their doctor should be up to the times, that he should be among the best, and that he should not become fossilize. I have no doubt that there are other reasons why every medical man in Michigan should attend the American Medical Association meeting, but it seems to me that any one of the above given should be sufficient. Let Michigan turn out *in toto*. Let every one of the three thousand or more physicians in the state meet with his fellows in Detroit in June and be rejuvenated, refreshed and a better doctor when he returns to his home.

V. C. VAUGHAN, SR.

HONORABLE MENTION.

The collecting of the annual dues for membership devolves upon the County Secretary. The House of Delegates has enacted that all members whose annual dues are unpaid April 1st of each fiscal year, shall be suspended and remain suspended. The United States postal regulations are such that publications cannot be sent by second class mail to subscribers who are three months in arrears in their subscriptions. The House of Delegates has also enacted that members in suspension shall be without the protection of the Medical-Legal Committee. These regulations make it imperative that our members pay their annual dues promptly.

Doctors are woefully negligent of these regulations and so it happens every year that April 1st finds a goodly number who have failed to pay their dues for the current year and we have no alternative than to remove their names from the list of active members. Thus it also happens that each year several members apply for defense protection and on investigation it is found that the services for which suit is started was rendered during the period of the member's suspension and the Committee is compelled to refuse to defend the applicant. Every year some one or more pays such a penalty for his neglect.

County Secretaries spend a good deal of time and effort urging their members to pay their dues and even call on members in person. This work, this interest in their members frequently is overlooked and goes by unappreciated and unrewarded. Many members are indebted to their County Secretaries for this activity in collecting dues because in doing so these County Secretaries have protected the individual member's interest and prevented suspension.

It is but just and proper that acknowledgement be made of the services thus rendered by County Secretaries. The Editor is indeed pleased to publicly record that particular credit and honorable mention be made of the following County Secretaries, who, by their activities and interest, remitted *all the dues* of their members before April 1st.

Dr. A. F. Kingsley, Calhoun County.
Dr. F. J. Fralick, Montcalm County.
Dr. E. G. Sheffield, Bay County.
Dr. John H. Jones, Cass County.
Dr. Wm. Elliott, Delta County.
Dr. E. M. Highfield, Gratiot County.
Dr. C. R. Elwood, Menominee County.
Dr. E. J. Douglas, Midland County.
Dr. R. J. Beeby, O. M. C. O. R. O. Counties.
Dr. W. W. Arscott, Presque-Isle County.
Dr. D. W. Roos, Schoolcraft County.

The members of these Societies are deeply indebted to these efficient officers. Other Secretaries possibly have labored just as hard and earnestly but have been unrewarded for their labors by their unresponding members. They, too, are deserving of credit in like measure. They are undoubtedly disheartened and chagrined at the result of their efforts. They certainly merit credit and should be rewarded by the members of their society by prompt payment of current dues. In order that this may be accomplished we are publishing the names of County Societies, giving the number of members who have paid their dues and also the number of unpaid dues. We urge that those who are in arrears promptly cause their re-

instatement by remitting the required amount to your Secretary. County Secretaries cannot arrange profitable programs if their time is taken up in collecting dues. You owe your officer this co-operation.

APRIL 10, 1916.

County	No. Members in County	No. Members Paid
Alpena	16	13
A. C. E.	28	23
Barry	4	1
Bay	53	52
Benzie	5	3
Berrien	28	25
Branch	13	10
Calhoun	93	93
Cass	6	6
Cheboygan	6	2
Chippewa	28	19
Clinton	27	24
Delta	21	21
Dickinson-Iron	12	11
Eaton	37	33
Genesee	80	72
Gogebic	16	9
Grand Traverse	25	22
Gratiot	29	29
Hillsdale	21	10
Houghton	48	41
Huron	13	9
Ionia	19	15
Ingham	65	55
Isabella-Clare	15	9
Jackson	47	0
Kalamazoo Academy	143	136
Kent	152	104
Lapeer	23	23
Lenawee	36	23
Livingston	14	5
Macomb	30	24
Manistee	14	12
Marquette-Alger	39	36
Mason	9	7
Mecosta	18	17
Menominee	13	13
Midland	6	6
Monroe	24	21
Montcalm	29	29
Muskegon-Oceana	39	36
Newaygo	8	7
Oakland	48	45
O. M. C. O. R. O.	16	16
Ontonagon	9	7
Osceola-Lake	8	0
Ottawa	30	12
Presque Isle	3	3
Saginaw	63	33
Sanilac	17	13
Schoolcraft	6	6
Shiawassee	27	21
St. Clair	53	46
St. Joseph	14	13
Tri County	22	3
Tusocla	34	28
Washtenaw	75	67
Wayne	679	453

MICHIGAN'S COMPENSATION ACT—THE PROFESSION'S OBLIGATION.

The provisions of our Workingmen's Compensation Act have been in force for a sufficient period of time to enable certain conclusions to be drawn from its enforcement. While as yet there does not exist a universal endorsement of the measure and the methods of administration, there has been in evidence on the whole a palpable sentiment that may be interpreted as an endorsement of this law. True, here and there, one will find ardent supporters as well as equally ardent denouncers of the Act. However, it must be conceded that the law of compensation for industrial injuries, as in force in Michigan, has been a distinct step in advancement in the solving of social problems.

We feel that whatever criticism does exist is not wholly justified because of the placing of this law on our statute books but rather because of the misinterpretation of its provisions and an arbitrary administration of its prescribing clauses. The law in itself is a most satisfactory one and while certain amendments may appear desirable at the present time, the law in itself is sufficient in accomplishing the desired ends that were sought for. As it now exists it can be made more effectual and productive of still greater benefits if certain conditions and reforms are instituted.

he past few weeks the employers of this have perfected an organization to protect interests in any attempt to increase their lity by industrial legislation. Until the loyer receives impartial and fair considera- there cannot hopefully be looked for cer- proposed amendments becoming law and broadening of the scope of the law. As as the employer is compelled to pay for a ia that is congenital and has existed for s, for the loss of time that is prolonged by ditary taint or constitutional infirmities, failure on the part of the employee to co- ate to the extent of submitting to proper ment, for the employee's attitude of pro- ed alleged disability because his compensa- provided by the law added to his insurance odge benefits equals the amount received n he was at work, for malignering and ly for a physician's errors in wrong diag- s and improper treatment, just so long will e continue to exist a spirit of resentment objection to the broadening of the provi- s of the compensation law. The employers just reasons for assuming an attitude of se and protection.

is incumbent upon the physicians of Michigan to aid in broadening the scope of the compensation law. They can best do so by correcting the abuses and criticisms that have been laid at their doors, and which criticisms are substantiated by recorded facts. The law provides for medical and surgical care for the injured or sick employee and places upon the employer the responsibility for paying for medical, surgical and hospital expenses. This provision has been taken undue advantage of by the profession and the following charges are made: Increasing the amount of doctor's bills by making unnecessary visits, dressings and performing unnecessary operations, the prolonging of the period of disability to the end of three weeks, amputating limbs or members that might have been conserved, sending patient to hospitals where the injury did not actually warrant hospital care, failure to give the proper treatment, aiding an unscrupulous employee in securing payment for benefits for permanent injuries that did not exist, perjured testimony and the rendering of exorbitant bills wholly out of proportion to the services rendered. Serious charges, we admit, nevertheless, the evidence is on file to warrant making them and being true, can we sincerely become indignant and blame the employer for making these charges?

Evidence exists, where physicians rendered

tent the Industrial Board has been a party to such dishonest practices by being inclined to favor the employee unduly when questions of doubt as to facts existed. The Board has even arbitrarily over-ridden or ignored competent expert opinions, legal, technical and medical—and made rulings that are not compatible with scientific investigations and deductions. It is difficult to understand or explain the reasons that would cause the Board to assume such a dictatorial and empirical position. Until the employees and the Board demonstrate their desire to be impartially fair there is bound to continue an influential objection to increasing the benefits that the Act contains.

Thus far the right, privileges and benefits provided by this law have been enjoyed in a vastly greater degree by the employee and the surgeon and wholly out of proportion to the benefits that have accrued to the employer. In fact the employer has been denied most of his protection and has played the part of the "Goat."

The employer has been arbitrarily compelled to comply with rulings that were wholly unwarranted by facts, created by misstatements and erroneous interpretations. He has just cause for resisting any further legislation that seeks to place greater responsibilities and burdens on his business transactions. In fact with-

bills for twenty visits where the nature of the injury did not demand more than four or five visits. The cases have been "farmed" by certain doctors simply to pad bills and secure money from an employer whom they knew the law compelled to pay. Dressings have been made unnecessarily and repeated for prolonged periods when in reality they were not indicated. Visits have been made at the home and charged for where the patient was able to come to the office—the doctor having plenty of time on his hands and seeing a method of securing an extra fifty cents or dollar per dressing. Fingers have been amputated that might have been preserved, thus causing the employer to pay for the loss of a finger and increasing, without cause, the expenses. Certificates of disability have been given and testimony rendered when physical conditions did not present a solitary reason for such disability or loss of function. Physicians have endeavored and succeeded in collecting fees two, three and five times in excess of what has always been considered reasonable and ample. These and other instances of imposing upon and "holding up" the employer have caused the employer to compile data to demonstrate the method and manner in which the medical profession has sought to graft for the almighty dollar by sacrificing professional honesty, integrity and reputation for fair dealings. Serious charges they are indeed. They become more serious because they are true impeachments of our acts in rendering services prescribed by the compensation law.

What are we going to do about it? There will be those who will remain indifferent because they say they are not concerned, for in their work they do not have compensation cases. There are others who will deny the allegations because they have never perpetrated such offenses and have been square and honest in their every dealing—(yes, we are not all dishonest)—and these men will be loath to believe that there are those in the profession who would stoop to such practices. Then there are those who will rise up in an enforced attitude of apparent righteous indignation and set forth that what they have done is but right, that they are entitled to all they got, that they alone should be the judge of what their services are worth, that they alone know what care the employee needed, that they do not propose to be dictated to or have their services questioned, that they charge what they please and alone can establish the value of their services. It is this last class that is the causative factor in casting opprobrium upon the medical profession that has been advanced by the employer. It is that class of physicians that is causing the employers to organize to protect themselves and it is that class of physicians that is going to cause his honest, fair dealing fellow physician to eventually suffer. The employer is bound to accomplish the establishment of a plan or amendment that is going to afford him protection and we are fearful that the profession as a whole is going to suffer.

To lead up to the point of what is to be done we have thus briefly set forth a few of the existing conditions and submit the following suggestions for our readers discussion and consideration.

1. That our State Society set forth a reasonable and fair schedule of fees to govern services rendered in industrial accident cases.

2. That the State Society appoint an Arbitration Committee to whom a member may appeal for advice or opinion as to the reasonableness or unreasonableness of his bills that are questioned by an employer.

3. That the Society acquaint the Industrial Board and the Employers Association with the object of creating such a schedule and committee and assure them of our united willingness to correct abuses and to foster a frank honest plan of rendering service in those instances that are provided for by law.

Editorial Comments

Employers certainly have a right to question medical and surgical bills when rendered to them under the Compensation Act. They cannot be censored for questioning large fees when they find that the services rendered has entailed a long period of disability or permanent loss of function because by reason of improper care and faulty technic, infection was incurred; or, because a member was amputated that might have been saved. The employer is purchasing service and he has a right to pass upon and judge that service by the results obtained. Employers are keeping records of results and are reasonably able to state the results that should obtain. If the result in a given case does not meet up to the reasonable average they are within their rights when they raise the question of "below-par" service and skill. They cannot be condemned for refusing to pay first rate fees when they have only received second or third rate service. Employers are demanding, and rightly so, that doctors attending their employees shall exercise the full skill of a trained industrial surgeon. Industrial surgery is a definite specialty and has established statistical tables of normal results.

The Department of Agriculture, Washington has issued a valuable Farmer's Bulletin, No. 717 on "Food For Young Children." In it there is set forth the requisites for food for children between three and six years of age. Suggested bills of fare are presented and numerous recipes are imparted. Another Bulletin, No. 712 presents easily prepared menus for school luncheons. We recommend that interested readers write to the Office of Information, U. S. Dept. of Agriculture, Washington, for these two valuable pamphlets.

Board's of Health statistics during the next few years will be studied with interest to observe the progress of typhoid vaccination. Up to the present a number of studies have been made and the conclusions have been toward the endorsement of vaccination. The observations made in 100,000 cases establish the preventive powers of anti-typhoid vaccination. This practice of vaccination merits a universal adoption.

"There are errors which no wise man will treat with rudeness while there is a probability that they may be the refraction of some great truth still below the horizon. It is only an error of judgment to make a mistake, but it argues an infirmity of character to adhere to it when discovered. The Chinese say 'The glory is not in never falling, but in rising every time you fall.' To make no mistakes is not in the power of man; but from their errors and mistakes the wise and good learn wisdom for the future. Sometimes we may learn more from a man's errors, than from his virtues."

The attendance at the Detroit meeting of the American Medical Association promises to be the largest in the history of the organization. Are you planning to attend? Early hotel reservations are imperative.

The coming summer should cause every member to plan spending a definite amount of time in attending the national and state medical meetings and one or two weeks in the hospital and clinics of our medical centers. This is an absolute necessity if one wishes to remain abreast with the scientific progress of the profession.

The value of a peanut butter sandwich is equal in food value to a glass of cream. How many of the profession are aware of this fact and think to advise parents to incorporate this food in their recommendations of diets for underfed, poorly nourrished and physically weak children or even adults? We recommend that you take notice of the advertisement in this issue and send for a sample to become personally acquainted with this palatable and nutritious food. From personal experience we can testify to its wholesomeness of nutritional qualities. It is a pure, unadulterated food in every sense —we have seen the process of manufacture. Lastly it affords another opportunity for patronizing our advertisers.

In children under two years of age intestinal toxemia is the commonest cause of fever. If the temperature falls and remains low under catharsis or starvation for twenty-four hours, the diagnosis is confirmed. If fever continues for three or four days, otitis media should be thought of even in the absence of aural or mastoid symptoms. A sustained high temperature of 103 or 104 in infants should always be treated as a lobar pneumonia until a definite diagnosis can be made. In a child three years of age free from the signs of pneumonia, continuous fever should lead to a tentative diagnosis of typhoid. The fever of tuberculosis is always characterized by the slight degree of accompanying discomfort. A remitting fever, persisting day after day without apparent cause, should always arouse a suspicion of pyelitis and lead to an examination of the urine. The October 2, 1915 issue of the *Lancet-Clinic* contains a most instructive article on "Obscure Fevers in Infancy and Childhood."

Open every skull subtemporally of every patient seen early with supposed unlocalized brain injury. The mortality rate will be greatly reduced if this dictum be followed. To delay courts a fatal termination.

Whenever you have a valuable paper or interesting case to report do not forget to send it to your *Journal*. If you can't find time to contribute your mite towards its success you are negligent of the duty and loyalty you owe to your publication. Let this sink in: The *Journal* is your publication, it reflects your enthusiasm, your ability, your professional standing. Are you doing your part to maintain or elevate its standard?

Certain of our county Societies have been hibernating this winter. We presume the cause has been inclement weather, bad roads and an overly busy season. With the summer at hand we look forward to a renewing of their activities and the reporting of their meetings in our County Society news columns.

The Tri-County Society on April 6 conducted a Hospital clinic with several operative cases, a program of several interesting papers, with the day closing with a banquet. Such a meeting has proven exceptionally profitable and interesting. It is recommended that other counties arrange for similar meetings. Muskegon-Oceana county already have plans underway for a District meeting. We will be pleased to learn of similar activities in other parts of the state.

If you fail to boost your county society and do not put personal effort and time in its work you cannot hope to receive the benefits of organized efforts. The mere payment of dues is not all sufficient.

DETROIT MEETING A. M. A.

I beg to advise that the American Association of Industrial Physicians and Surgeons will hold a meeting at the Hotel Cadillac on Monday, June 12. These physicians will, of course, stay through the American Medical Association meeting.

The American Academy of Medicine will convene in Detroit, June 9.

The American Association of Anesthetists will

convene on June 12, and stay through the entire meeting of the A.M.A.

The American Proctologic Society will hold their meeting on Monday and Tuesday, June 12 and 13.

We have been advised that a large party of the Chicago doctors have secured a boat, which will bring them to Detroit. They have arranged to sleep on the boat while they are here in attendance at the meeting.

We are handing you herewith a letter on hotel headquarters and meeting places. All Section and Alumni Dinners will be held on Tuesday evening, June 13. To date, Johns Hopkins, Rush Medical College, Harvard, George Washington University of Medicine, Washington University of St. Louis, University of Michigan, Detroit College of Medicine and Western Reserve School of Medicine have signified their intention of having dinners.

Section Dinners, which we have been advised on to date, will be given by the Sections on Obstetrics, Gynecology and Abdominal Surgery, Diseases of Children, Nervous and Mental Diseases, and Section on the Practice of Medicine.

The opening meeting of the Detroit Session will be held at the Lyceum Theatre Tuesday morning, June 13.

A General Public Meeting on Public Health will be held Friday afternoon, June 16, at the same Theatre.

In the line of entertainment we beg to advise that on Wednesday evening will be held the President's reception at the Hotel Statler, Thursday evening, Palais de Danse on East Jefferson Avenue has been engaged for a dancing party.

The steamer St. Claire has been chartered for the afternoon of Friday, the 16th, so that visitors may enjoy a lake ride. The boat will dock about five o'clock and leave again about seven for a moonlight boat ride. Dr. Torrey will hold a lawn fete for the ladies in attendance at the Convention on Wednesday evening, June 14. The Blackwell Society has also signified their intention of entertaining the ladies some afternoon during the week.

The Alpha Epsilon Iota Fraternity will maintain headquarters in Suite 712, No. 38 Adams Ave., West, during the week of the Convention.

The Convention Number of the *A. M. A. Journal* will be dated May 6. The larger part of the *Journal* will be devoted entirely to Convention news, information, etc.

It has been conceded by the Chicago officers that this meeting will be the largest in the history of the Association. Hotel reservations are being made in blocks of one hundred for parties coming here from different cities.

There will be something like two hundred commercial exhibits in connection with a very large scientific exhibition at the Detroit Light Guard Armory. General headquarters will be at the Hotel Statler. A.M.A. postoffice, Information Bureau, Registration Bureau and the Distribution of Tickets for Entertainments will all be at the Light Guard Armory.

The chairmen of the various committees are as follows:

Finance—Ernest W. Haass.
Entertainment—Arthur D. Holmes.
Registration—Frank B. Walker.
Printing and Publication—James H. Dempster.
Halls and Meeting Places—Frank B. Tibbals.
Scientific Exhibits—J. Walter Vaughan.
Commercial Exhibits—John N. Bell.
Hotels—Rolland Parmeter.
Automobiles—Angus McLean.
Information—Walter W. Manton.
Non-Affiliated Organizations—Guy L. Kiefer.
General Representative—Paul Tice.

The Local Hotel Committee has a system of reserving rooms at the hotels which insures accommodations for those making their reservations through the Committee. A triplicate card is made out, one copy going to the hotel, one copy sent to the party making the reservation, and one will be retained in the files of our office.

We would appreciate a notice to the effect that no more single reservations are available in any of the Detroit hotels for this meeting. It is necessary in all cases to double with a friend or fellow. Hotel reservations should be made through the A.M.A. Hotel Committee, No. 33 East High Street, Detroit, and all inquiries are promptly taken care of.

Trusting that with this information you will be in a position to give the matter some publicity, we are

Very truly yours,
ARRANGEMENTS COMMITTEE
Paul Tice.

P. S.—Since dictating the above advice has been received that the Sections on Ophthalmology and Laryngology, Otology and Rhinology will be given a boat ride Tuesday evening, June 13, instead of a section dinner.

TRIP TO ANN ARBOR.

My Dear Doctor:

The Regents and the Faculty of the Medical School have invited the members of the American Medical Association and their ladies to visit the University Friday, June 16, and have appointed this day for a reunion of all former members of the Medical School. The following provisional program has been arranged.

Each of the members of the Medical Faculty will appoint an hour when he can be seen by his friends. From 10:30 to 12.00 there will be clinics and demonstrations at the hospitals. At 1:00 o'clock all will gather at the Barbour Gymnasium for a luncheon which will be provided by the Regents. In the afternoon the medical laboratories will be open and will have demonstrations.

A committee of the wives of the Medical Faculty will meet the ladies and conduct them to places of especial interest. All the museums and collections will be open. Automobile drives will be arranged for those who wish to visit the city.

At 3:00 o'clock there will be an organ recital in Hill Auditorium. Class meetings will be held at 4:00 o'clock. From 4:30 to 6:30 Doctor and Mrs. Vaughan will give a reception at their home. In the evening there will be class dinners arranged by many of the classes, and a general dinner for members of other classes and members of the Association who register for the same before Wednesday evening at the Detroit office.

I am sending this program to all our classmates.

I hope you may be able to attend the June meeting of the American Medical Association and go with us to Ann Arbor.

The Committee on Hotels request you to make early reservations, because the best rooms are being rapidly reserved. Send applications to

"HOTEL COMMITTEE,
33 High St., East.
Detroit, Mich."

SECTION	HOTEL HEADQUARTERS.	MEETING PLACE
Practice of Medicine	Pontchartrain	First Presbyterian Church
Surgery, General and Abdominal	Tuller	Woodward Ave. Baptist Church
Obstetrics, Gynec. and Obdom. Surg.	Statler	Woodward Ave. Baptist Institute
Ophthalmology	Statler	Statler Hotel
Laryngology, Otology and Rhinology	Statler	Statler Hotel
Diseases of Children	Addison	First Presbyterian Church
Pharmacology and Therapeutics	Tuller	Tuller Hotel
Pathology and Physiology	Tuller	Tuller Hotel
Stomatology	Ste. Claire	Pontchartrain
Nervous and Mental Diseases	Plaza	Y. M. C. A.
Dermatology	Pontchartrain	Pontchartrain
Preventive Med. and Public Health	Cadillac	Cadillac
Genito-Urinary Diseases	Pontchartrain	Pontchartrain
Hospitals	Charlevoix	Tuller Hotel
Orthopedic Surgery	Charlevoix	Baptist Church Institute
House of Delegates		Wayne County Med. Bldg.
GENERAL HEADQUARTERS	STATLER	
OPENING SESSION	LYCEUM THEATRE	

Deaths

IN MEMORIAM.

Since this Society last met Dr. Mason W. Gray has passed away. Death came at his home in Pontiac on April 13, 1915, after an illness of several month's duration from Addison's Disease. It seems fitting that the Oakland County Medical Society should spread upon its records some slight expression of our esteem for him and of our keen sense of loss, which we feel deeply.

Dr. Gray was born in Troy township, in Oakland county in 1855. He attended and graduated from the Michigan Agricultural College in 1877. The degree of M.D. was bestowed on him by the Medical Department of Michigan University in 1880. Then followed Post Graduate work in the University of Pennsylvania and a period of practice in the copper country of Northern Michigan, after which he chose Pontiac for his home and resided here for a third of a century, continuously ministering to the needs of this community.

Dr. Gray was active in organizing the Pontiac Medical Society and was its first President. He was a charter member of our own Society and President for one year. He was a member of the Michigan State Medical Society, of the American Medical Association, and of the American Public Health Association. He was appointed by the Governor as one of the State Board of Health and served one term. He also was elected and served as Mayor of Pontiac. In all these relationships he showed good judgment and discretion.

Perhaps he will be remembered most by his fellow associates in practice for his efforts to advance the cause of "organized medicine." He was always willing to use his time and strength in making plain the better way to advance the cause of scientific medicine; he was anxious to keep peace between the members of the Society; and he guarded carefully the interests of the profession. Well may we say that he was a devoted and unselfish friend, a sympathetic and wise counselor, and an honest man!

DR. W. MCCARROLL.

Dec. 14, 1915.

State News Notes

The institution that for forty years has been known at the Union Benevolent Home and Hospital (U. B. A.) in Grand Rapids has, on the dedication of its new hospital building changed its name to Blodgett Memorial Hospital. The change is made in honor of the donor of the new building who caused its erection in memory of his father.

Edward W. Lowe of Grand Rapids has completed the purchase of an entire block opposite the present Butterworth Hospital. Although no authoritative information has been imparted it is presumed that the purchase was made to provide a new site for the erection of a new hospital building. Mr. Lowe has for many years been interested in Butterworth Hospital, serving for many years as President of the Board of Trustees.

Reliable automobile liability insurance may be secured at much lessened rates by applying to the Michigan Automobile Owners' Association. Their "ad" appears in this issue. This insurance affords full protection and is the means of causing you the saving of several dollars in premiums. Write for detailed information.

The Class of 1904, Ann Arbor, will hold a reunion in Ann Arbor at the time of the A.M.A.

visit to the University. Dr. G. A. Seybold, Class Secretary, informs us that there are thirty-five members of the class of 1904 located in Michigan. Every member is expected to make the effort to be present. For full information and program, write to Dr. G. A. Seybold, Jackson, Mich.

The Committee on Transportation is considering the running of a special train to Houghton for our Fifty-first Annual Meeting. If the plan is adopted the sleepers will be parked in a suitable place so as to serve as sleeping quarters during the entire meeting. Details will be imparted in the June issue.

The next examination for admission to the Medical Corp of the Navy will be held in Washington, Boston, New York, Philadelphia and Chicago about June 16. For information write to the Surgeon General, U. S. Navy.

With the April issue, the *Military Surgeon* appears in very greatly enlarged form and improved appearance. It is practically a magazine *de luxe* and one may profitable include it in his readings.

President Hornbogen has appointed Dr. Alexander McKenzie of Port Huron to serve as Chairman of the Section on Surgery. Dr. McLean is unable to serve in that capacity.

Dr. Leo C. Connelly of Detroit sailed on April 8 for France, where he has secured a staff appointment in a French Base Hospital. The service is for six months.

The American Association of Railway Chief Surgeons met in Chicago, May 1st. Michigan has three representatives in that organization.

The Annual Commencement of the Medical Department of the University of Michigan will be held June 21.

The State Board of Registration in Medicine will hold its regular examinations in Detroit June 1, 2 and 3, and in Ann Arbor, June 19, 20 and 21.

Drs. C. G. Jennings and P. M. Hickey of Detroit addressed the Kent County Medical Society on the evening of April 12.

If you are planning to attend the A.M.A. meeting in Detroit and haven't reserved your rooms you had better do so at once.

Dr. A. P. Ohlmacher of Detroit has occupied new offices in the Kresge Building.

Dr. A. F. Kingsley of Battle Creek has been appointed health officer of Washington Heights.

Dr. Wilfred Haughey of Battle Creek is pursuing a special course of study in Harvard.

A Psychopathic Ward, a branch of the University Psychopathic Hospital, has been opened in the United Charities Building in Detroit.

D. R. H. Nichols of Bellaire has located in Holland.

Dr. A. G. Holliday has been appointed full time Health Officer for Traverse City.

A new hospital is being erected in Sault Ste. Marie at a cost of $50,000.

A new hospital for Marquette is announced by Dr. S. M. James. It will accommodate twenty patients.

The Annual Commencement Exercises of the Detroit College of Medicine will be held on June 8.

Dr. J. R. Hansen has located in Greenville.

County Society News

BAY COUNTY

The regular meeting of the Society took place March 13 at 4 p. m. A clinic was held at Mercy Hospital on Cardiac Diseases conducted by Dr. A. G. Hewlett of the University of Michigan. There were a large number of cases present. A number of Saginaw physicians were present.

At 6:30 this Society sat down to a well appointed dinner at the Elk's Club. Among our guests were Dr. Hewlett of the University of Michigan, Dr. Wm. DeKleine, Director of Tuberculosis Survey State Board of Health and some 20 members from Saginaw County Medical Society. In all fifty-eight physicians sat down to dine.

After dinner the meeting was called to order by President Grosjean. He introduced the speaker of the evening, A. G. Hewlett, Prof. of Medicine in the University of Michigan who gave an excellent discourse on "The Pacemaker of the Heart" illustrated by lantern slides. He refreshed our memories on the physiology of the heart and its application in diagnosing morbid states of the circulatory system in general. His paper was well received.

After a short discussion the meeting adjourned.

Fred S. Baird, Secretary.

CALHOUN COUNTY

In the meeting of March 21 the Calhoun County Medical Society departed somewhat from the regular order of program and invited in some business men from the city to address the members on various subjects. No business was transacted at this meeting, it being a purely social event, the doctors having an opportunity to observe how members of other professions looked upon our own. It proved a very pleasant and profitable meeting and we are glad to report something from each speaker.

Mr. W. I. Fell, of the Michigan Carton Company, read a paper exhibiting considerable thought and effort on his part. It was a very profitable paper and elsewhere we are pleased to publish the paper in full.

Attorney B. J. Onen followed, and warned the profession that as expert witnesses our efficiency is decreased by our own carelessness. He pointed out the legal aspect of certain situations, and warned the physician of his status under certain legal conditions.

Mr. W. J. Smith, Vice-President of the Old National Bank, was next introduced and gave a very excellent address from the standpoint of a financier. He related several anecdotes which were very pleasing and served to brighten the situation. Following this he gave an excellent discussion of bond issues and manufacturing enterprises as a means of private investment, pointing out the relative merits of each and warning physicians against investing in securities which are not well backed. Mr. Smith closed his address by paying a compliment to the Doctor's profession and expressed himself as follows:

"The Banker views the Doctor upon the highest plane of citizenship, for his profession is intrusted with the most sacred responsibilities of honor and character that enter the lives of men and women. He is with us at the dawn of our existence, and he will be standing sentinel when the dews of life's evening are gathering, and the shadows of the long night are falling around us. From the beginning to the end, from sunrise to sunset in human life we are conscious of our dependence upon him.

"We turn to him in our suffering and our helplessness; in the hour of despair and desolation. When faith and courage seem to have perished in the human breast, we look to him for one little ray of hope to bring back those who are near and dear to us that we may enjoy their affection, their love and comradeship, back again into this world of high aspirations, action and achievement.

"I can readily understand why the Doctor is drafted many times into the field of civic and political life. Who is better qualified to pass upon the complex problems that touch humanity on every side. His life work brings him into the closest touch with every phase of human experience from the heights of joy to the depths of tragedy.

"I appreciate the opportunity of discussing some of the interesting financial topics of the day in this presence, yet I am reluctant to dwell too long with questions that deal solely with dollars, as I am conscious of my obligations as a guest by the courtesy of men whose constant effort is dedicated to the cause of humanity.

"It gives me pleasure to express the greatest admiration for your profession which should always challenge the keenest appreciation of your fellow men. It gives me further satisfaction to say these things frankly as I am one of those who believes a 'rose for the living is better than sumptuous wreaths for the dead.' As I contemplate your work with mankind I am not unmindful of the sacrifice you are making for all that is best to upbuild the citizenship of our country. You are always listening for the call of duty; in the heat of summer and the cold of winter, in storm and clear, in sun or rain; in the turmoil and business strife of midday or in the silent midnight hour, the call of suffering brings additional test of your loyalty and devotion to the highest impulses in the heart of man.

"In the beautiful lines of Stuart Maclean we find a most fitting expression for the reward of your activities and work.

'My days are ships that put to sea
While in the dusk I silent stand
And watch them sailing far from me
To some unknown, far-distant land.

Into the dim and starless night,
Over an ocean gray and lone,
Onward they sail, nor left nor right,
Each with a cargo of its own.

I may not know till all is past
What port they make when over sea;
But this—I know that I at last
Shall find my ships awaiting me.

Then may I stand and smile at Death,
If I have sent in every one
A little love, a little faith,
A little deed of kindness done.'"

The program was closed by a talk by Mr. L. B. Anderson of the Advance Pump and Compressor Co., who offered certain words of criticism more or less founded upon fact. Some of these criticisms he said were based upon personal observations but on the whole, we were of the opinion that his observations had been made in the offices of osteopaths, chiropractors or some even more irregular practitioners.

The meeting closed with a buffet luncheon provided under the direction of the Entertainment Committee and was a most enjoyable affair in every way.

A. F. KINGSLEY, Secretary.

THE PHYSICIAN AND HIS RELATION TO THE PUBLIC.*

MR. W. I. FELL,
President of the Michigan Carton Co.

I feel highly honored, however, to receive the invitation to appear before this august body of learned and intelligent men, assembling here from all parts of one of the best counties—in the best state—of the unquestionably best nation in the world, banded together for a purpose—the building up of the health of the unfortunate—the tearing down of the old and diseased tissues, and replacing same with new, that the afflicted ones may become well and strong, better enabling them to go about their work and to better provide for themselves and their dear ones.

This getting together once a month is, in my opinion one of the most charitable acts that can be offered by any association, charities club, or fraternal organization. Why? Because you meet month after month, year after year, and for just one purpose, and that to exchange experience and talk matters over, all for the building up of the broken down in health. Do business men do this? Oh, yes, they have their associations and they get together, but if they think they have a way of doing things a little better or cheaper than the other fellow they keep that under their hats. They don't care to invite competition with that new discovery. So unlike the doctor.

*Read at the meeting of the Calhoun County Medical Society March 21, held in the Chamber of Commerce Rooms, Battle Creek.

Is the doctor likable? Well, to analyze this I will first go back to my own family, who claim kin to the once noted Doctor Fell, who was the target for the old familiar verse which I will quote,

"I do not like you, Doctor Fell,
The reason why I cannot tell;
But I do not like you, Doctor Fell."

The very fact that the author of this verse admitted the reason why he could not tell, is absolute proof that he loved the doctor. If you don't like a person there is a reason, and you can locate the reason every time if you want to. Why shouldn't we love the doctor? He is the first to take us into his grasp when we come into this world, and he is the one person who stays by us until the last breath is gone, and our spirit has departed to that Great Beyond.

The Doctor as a Philanthropist.—In this one thing, if in no other, the medical profession leads. In the first place, a large percentage of their daily labor is purely charity, and they realize it, too, before they accept the call, but they go just the same. Their charity work, however, is not confined to their skill and services alone, not by any means. When necessary they go deep down into their pockets and pull up the long green. I know from whence I speak, for I recently attended a club meeting where a request was made to raise funds to extend the services of a visiting nurse who was doing wonderfully good work among the poor and needy of the city. Then and there, at that little gathering, over $300 was subscribed, and I noticed that each of several doctors dug up amounts equal to that subscribed by large and wealthy corporations. Any personal motive there? I think not. This nurse will surely dig up more charitable work for the doctors, so they get touched both going and coming.

And let me add right here; is there any better way to build up and beautify our towns and cities than to send visiting nurses to the homes of poor families? I have said it before, and I repeat, that the home surroundings is the key to the cleaning up and beautifying of the city. Cleanliness is contagious as well as is disease. If we want healthy men and women we must have healthy boys and girls. The boys and girls of today are the men and women of tomorrow. If we help their home surroundings and encourage them to be neat and tidy, we are doing just that much toward beautifying and cleaning up our cities. Therefore, I maintain that the doctors can do, and are doing, more for the movement of race betterment than any other class of either business or professional men.

I recently had occasion to visit the Municipal Hospital located in the city of Philadelphia, used exclusively for contagious diseases. It was my pleasure while there to meet Dr. Buckingham, General Superintendent of the institution. I was visiting one day with the doctor in his office, and asked him a great many questions about their buildings, grounds and system. I found him a very congenial gentleman. He knew I was from Michigan, and said, "Mr. Fell, if you have an hour or so to spend, I would like to take you through our plant." He added, "You seem to be more interested in this institution than most of the people who belong in Philadelphia, as you asked me more questions about it since you were here than I was ever asked by any of our own citizens."

He first showed me the plant, stating that he and two architects made several trips to Europe, spending months there studying sanitary conditions in hospitals for contagious diseases.

The grounds cover sixty-three acres. The buildings for the different diseases are segregated so that there is no danger of a person taking one disease when convalescing from another. They have an open air veranda one thousand feet long for the nurses to promenade and wheel their patients when out for airing. In the winter this veranda can be enclosed, or partly enclosed, as weather conditions require. Under the buildings leading from the power plant are passage ways where the workmen, such as plumbers, steamfitters and repair men can pass from one building to another without coming in contact with disease. When the buildings that are now in the course of erection are finished, there will be an expenditure of two and a half millions of dollars. Dr. Buckingham tells me that the grounds, buildings, plant equipment, and everything pertaining to the hospital was laid out in accordance with his ideas. I assure you the lesson I learned while in conversation with Dr. Buckingham was very beneficial. I believe there are very few business men in this country who could handle matters in a more systematic way than did the Doctor.

It was with much difficulty that I was granted an interview with Dr. Irwin, who is at the head of the Health and Charities Department of Philadelphia, and it was only made possible by a letter of introduction from Mayor Blankenberg. When I got to the Doctor's office people were lined up twenty deep, waiting to get in, and I thought to myself if I do get to the Doctor he will be so busy that he will not be able to give me a minute of his time. My letter, however, helped a great deal, and I was ushered in ahead of about twenty others. When I did meet the Doctor I was shown all the courtesy possible. He said there was no hurry, and to take my time when I began to edge away. I reminded him that there were about twenty waiting for him in the outer office. He replied that if that was all it was easy; sometimes there were fifty to seventy-five. When I left I could not help but think of the amount of business Dr. Irwin is doing, as compared with the average business man. Probably the ratio might be ten to one, as yet I believe he was of that make-up that everyone went from his office satisfied.

There occurs to me several notable examples which will recur to the minds of all of you as I mention names. For instance, Dr. Oliver Wendell Holmes, who aside from being a professor of anatomy and physiology in Harvard Medical School, was more in demand as a lyceum lecturer for years. It is not so well known that for forty years he was pastor of the First Church in Cambridge. He is best known to us because of some of his poems, which have lasted down to today; poems like "Old Ironsides," and "The Last Leaf."

Then we think more lately of Sir Conan Doyle, the creator of Sherlock Holmes, who for years was a practicing physician, deserting it for literature in his maturer years.

Dr. S. Weir Mitchell, who, greatly famous as a

medical author, certainly found greater favoritism in the field of novelism, with numerous essays, poems and novels to his credit.

In Politics, members of the medical profession have been quite prominent. Dr. Pardee, who became Governor of California some fifteen years ago, and Dr. Jacob H. Gallinger, who has been Senior United States Senator from New Hampshire for many years. The House of Representatives has always had many physicians upon its roster.

In the Domain of Finance, we can mention Dr. W. Seward Webb, seldom thought of as a physician, yet after graduating in medicine in New York and Vienna deserted the profession and became best known as the manager of the Wagner Palace Car Co. He was a director in many of the great railroad companies of the country, through his connection by marriage with the late Wm. H. Vanderbilt, having married Mr. Vanderbilt's daughter.

As Publicists, the profession has always been prominent. We read editorials by Dr. Frank Crane, and always think of him as a Doctor of Divinity. He was first a physician; then ordained to the clergy, and in his later years was prominent as a publicist and lecturer.

We are familiar with other writers, such as Dr. Woods Hutchinson, who we hear of through the columns of the *Saturday Evening Post* and other standard magazines.

Certainly Dr. Harvey W. Wiley reached great fame as the director of the Bureau of Chemistry of the United States Department of Agriculture. Without much question he put the Pure Food subject before the public in a fixed, hard way that it has never forgotten, and will not forget. In doing that he was getting outside of strictly professional matters, and did a world of good. Since leaving his official position he, like Dr. Goudiss of the *Forecast Magazine,* has continued the propaganda of Pure Foods and their relation to good health, and his name is a household word.

General Leonard Wood, Commanding General of (what army we have), was originally in the service, in his staff position as Regimental Surgeon. Through bravery in Western Indian fighting he jumped the barrier from staff to the line, and became through rapid promotion the ranking general officer of the company, absolutely forgetting and leaving behind him his profession, so far as life's duties were concerned.

Then there is Dr. Cook, of North Pole fame. As the years go on he seems to be less of a joke, and it may be that another generation might further advance his contentions. He then is a physician who at least made himself prominent in the field of exploration.

Statistics show that less than 50 per cent. of the medical college graduates follow the profession. We wonder sometimes what becomes of the other half, and whether or not their medical education is of any assistance to them in the vocation they have selected. And this reminds me that we have in Battle Creek one such doctor, who graduated with high honors from Columbia University, and I am sure that if he had followed the profession he would have been equally as keen, thorough and pleasing in his practice as he now is in the work to which he was called. And without his medical education he could not have been so successful at the new work. He is now writing advertisements for one of the largest advertisers in the country; his ads are read by millions, and it costs more than a million dollars annually to insert them. His knowledge of medicine and ethics enables him to write an "ad" that will keep clear of the odor of any patent medicine or quack advertiser, and still appeal to the person who is looking for a change of diet. The doctor referred to is none other than Dr. Charles W. Green, who is employed by the Postum Cereal Co.

And in getting down to the more material and intimate side of our local life, let us consider the physicians, who, without deserting their practice, have held the position of Mayor in our home city, namely, Doctors Cox, French, Gillette and Zelinsky, who served well in our council and in the management of the affairs of our city, and did much credit to themselves.

Doctors as Farmers.—As a common, ordinary David Harum, we have a doctor who has no peer. It is only a few years ago that he purchased a sand pile about three miles east of town, paying three thousand dollars for it. Everyone laughed at him for making the purchase, telling him that a warranty deed would not hold, and he would have to use a chattel mortgage so he could go into the next county after every wind-storm, foreclose, and bring back his pile of sand. This talk, however, did not faze the Doctor. He waited his chance, till one day an exceptionally shrewd real estate dealer came along. The Doctor unloaded his pile of sand for seven thousand dollars, and after telling "Yours Truly" what he had done, wanted to know what I thought of his deal. I told him he ought to be ashamed of himself and should return at least one-half of the sale price. He told me later that he did feel a little guilty over the matter, and had voluntarily made a concession. It appears that in the original transfer of the sand pile, the Doctor reserved the right to cross the back end of the place and fish in a trout brook. This privilege he personally valued at $500, so in order to give the real estate man a clearer title he waived his fishing right for $250. The Doctor is present, so it won't do to mention his name. Also he is a good neighbor of mine, but very peculiar in his practice. Won't give you one bit of attention if your ailment is below the chin; puffed up considerably lately—daddy of a forty pound boy. "Namely" his make-up is hard—a school boy could write on either side of him. Sleight.

The doctors of Battle Creek have got the bug for this farming business, the latest combination being the Shipp-Elliott Syndicate. They have a large preserve near St. Mary's Lake. Dr. Elliott is the scientific end of the combination, and Dr. Shipp the practical. They recently bought a very blooded cow. Had it shipped in from New York State. As soon as it arrived and was delivered to the farm, they of course were very anvious to inspect the cow. Dr. Elliott got up early next morning, called up Dr. Shipp, and asked him to go out to see the cow. Dr. Shipp reluctantly declined, having some professional calls to make that morning, So Dr. Elliott went out alone. The care-taker had placed the cow in one of the stalls in the barn. Dr. Elliott, not knowing which side of a cow it is customary to approach at milking time went in on

the left, put his hand on the cow's rump, and said, "Hoist." She did. With a stiff kick she hoisted him out of the stable. He got up, brushed himself off, got into his car and drove straight to town, and went immediately to Dr. Shipp's office. The Doctor was in, anxious of course to know what Dr. Elliott thought of the new cow, and of course asked the question, "How is she, Doctor?" "Right up-to-date," replied Dr. Elliott, "she's a self-starter and a left-hand drive."

The Physician as a Sportsman.—You find him in the field and woods with dog and gun, on the lake and along the stream with rod and reel, on the golf links, on the tennis courts, at the ball game, at the races, in the theater, and most all places of amusement. But he is not there enough, is too intent upon his practice and looking after the health of others, so really neglects his own health.

What I have had to say in the brief space of time allotted me are simply personal observations of the physician as I have met him from time to time, both professionally and socially, and not from any deep thought or study, but related in a simple way such as you might expect from a business man not accustomed to speaking in public.

LAPEER COUNTY

The Lapeer County Society met at the Hotel Elaine, Lapeer, on Tuesday April 11, 1916 and it proved to be a very profitable meeting in many ways, although the attendance was mostly limited to members of the city on account of the very bad roads and railroad connections.

We were highly honored with the presence of Dr. C. M. Stafford of Detroit and Dr. J. G. R. Manwaring of Flint. The former gave us a very instructive paper on the Rational Use of Vaccine while the latter gave a fine discussion on the Cancer problem. Both papers were fully discussed and many helpful hints given to members of the Society.

It was voted that our County Society would hold meetings once each month from April to November instead of every three months, and to have one or two out of town speakers for each meeting.

The next will be held at Almont on Tuesday, May 9, 1916, and the Tri County Society have been invited to this meeting in order to help make it more interesting for each society.

Our speakers for the next meeting are Drs. J. H. Carstens and Chas. W. Hitchcock of Detroit and Dr W. J. Kay of Lapeer, each of which being well versed in medicine should make a program well worth going miles to hear.

A measle epidemic in the county is keeping most of the physicians very busy but it is to be hoped that this will not last long enough to detain any members from attending the Almont meeting.

The new $35,000.00 Hospital at the Michigan Home and Training School at Lapeer has just been completed and is one of the finest hospitals in the State.

It is being rapidly filled with patients who will be much better cared for in a building of this kind than in cottages. Much credit is due to Dr. H. A. Haynes the Superintendent in being fortunate enough to get such a fine building, to take care of Michigan's unfortunate children.

J. H. Douglass, Secretary.

ST. CLAIR COUNTY

The regular meeting of the St. Clair County Medical Society was held Thursday evening March 30, 1916, at the Harrington Hotel, Dr. Case of Battle Creek being the guest of the evening. After dinner the meeting was called to order by the President, Dr. McKenzie, who introduced Dr. Case of Battle Creek. His subject being "Differential Diagnoses of Upper Quadrant Lesions with Reference to the X-ray." His subject was very interesting and appreciated by all.

Dr. Frank V. Carney was elected a member of the Society.

Twenty-five members were present at the meeting.

TRI COUNTY

"The clinic April 12, was one of the best we have ever had in Cadillac," said a local physician this morning. "It began at 1:00 o'clock at Mercy Hospital and there wasn't a dull moment from that time."

Seventeen physicians and surgeons, including eight from out of the city, attended the clinic.. Dr. E. K. Cullen performed four operations at the hospital in the afternoon, all those operated on being from out of the city. The operations were of great interest and unusual value to those present.

Following the operations, the Sisters served the doctors a light lunch at the hospital. At 6:30 the physicians gathered at the hotel for a dinner and later went to the county building where an interesting program was given. Dr. Cullen lectured and made a plea for an early diagnosis of cancer.

Out of town doctors who attended included E. K. Cullen of Detroit, E. B. Babcock and A. G. Burwell of Kalkaska, S. E. Neihardt of South Boardman, D. F. Huntley of Manton, J. H. Barnard of Tustin, John Gruber of Mesick, and F. W. Dorr of Jennings.

O. L. Ricker, Secretary.

Book Reviews

THE CLINICS OF JOHN B. MURPHY, M.D., at Mercy Hospital, Chicago. Volume V. Number I (February, 1916). Octavo of 194 pages, 33 illustrations. Philadelphia and London: W. B. Saunders Company, 1916. Published Bi-Monthly. Price per year: Paper, $8.00. Cloth, $12.00.

The usual standard prevails.

GOULD'S PRACTITIONER'S MEDICAL DICTIONARY. Third Edison, Revised and Edited by R. J. E. Scott, M.A., B.C.L., M.D., of New York. XX. 962 pages. Flexible cloth, round corners, Marbled edges. $2.75.

The object in view in publishing this new edition of "Gould's Practitioner's Medical Dictionary" was to provide a modern dictionary for physicians and medical students that should be up-to-date; contain all the words that are needed; be issued in a form convenient to handle and to be published at a low price.

With this aim before them the publishers realized that such a revision could only be made by resetting the type throughout, thus eliminating all that was old and giving the editor absolute freedom to include

the new. The editor and publisher have kept in mind the following features:

The inclusion of all the Current Words and Terms

All Pronounced and Defined on the Gould System.

Accuracy and Reliability.

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We trust that you will find that these ends have been accomplished and that this book is a worthy successor to the several editions of Gould's Medical Dictionaries, the sale of which has reached almost 400,000 copies.

About 70,000 Terms (an actual count makes 70,900).

The use of Clear, Readable Type.

Nine hundred twenty-six pages, weighing only 2¼ pounds.

Flexible Bindings, Cloth and Leather, Marbled Edges, Round Corners.

Height, 8¾ inches; Width, 6¼ inches; Thickness. 1¼ inches.

Price $2.75 in Cloth.

THE PRINCIPLES AND PRACTICE OF PERIMETRY. By Luther C. Peter, A.M., M.D., F.A.C.S. Associate Professor of Ophthalmology, Philadelphia Polyclinic and College for Graduates in Medicine; Ophthalmologist to the Rush Hospital for Consumption and Allied Diseases. 232 pages, with 119 illustrations. Cloth, $2.50 net. Lea & Febiger, Publishers, Philadelphia and New York.

A few outstanding facts regarding this new work are worthy of attention. It is the first book in the English language, so far as is known, devoted entirely to the subject of Perimetry. The needs for such a work are urgent because text-books do not deal with the fundamentals of perimetry and its principles, but confine themselves largely to the clinical findings in individual diseases. The student therefore has nothing to guide him in the taking of fields and the general pathology of fields.

The progress of the science of ophthalmology and the development of post graduate teaching have awakened new interest in perimetry as a refinement in diagnosis and a necessity in many obscure brain conditions. The allied branches of brain surgery, neurology and rhinology are demanding more careful study in perimetry in the brain conditions in which perimetry is essential for a diagnosis. This book will be found particularly valuable not only to the specialist in ophthalmology but to the physician or internist who owing to the great interest manifested in perimetry today is expected to make perimetric studies.

VENEREAL DISEASES. A Manual for Students and Practitioners. By James R. Hayden, M.D., F.A.C.S., Professor of Urology at the College of Physicians and Surgeons, Columbia University, New York; Visiting Genito-Urinary Surgeon Bellevue Hospital; Consulting Genito-Urinary Surgeon to to St. Joseph's Hospital, Yonkers, New York. 12mo., 365 pages, with 133 illustrations. Cloth, $2.50 net. Lea & Febiger, Publishers, Philadelphia and New York, 1916.

The fact that Hayden's work on venereal diseases has passed through three revisions since it first appeared is in itself sufficient evidence of its popularity and merit. The new fourth edition will undoubtedly maintain the reputation of its predecessors. It has been carefully revised and considerably enlarged. The subject matter has been brought fully up-to-date and the addition of numerous illustrations, for the most part showing the author's own cases and methods of treatment, has greatly enhanced the value and interest of the work.

Dr. Hayden covers the subject of venereal diseases in a very clear and concise manner. Of the thirty-six chapters in this book he devotes eighteen to the discussion of *Syphilis* in all its phases, giving explicit directions both as to diagnosis and treatment. Nine chapters are given to the discussion of *Gonorrhea* and nine other forms of venereal diseases. This allotment of space is in proportion to the importance and significance of the subject matter.

The general practitioner will find in Hayden adequate guidance for the care and treatment of any form of venereal infection which he may meet in practice; the student of medicine will find in this book a clear and precise presentation of accepted facts and proven practice; the specialist will find it valuable as a manual for ready reference.

PULMONARY TUBERCULOSIS. By Maurice Fishberg, M.D., Clinical Professor of Tuberculosis, University of Bellevue Hospital Medical College; Attending Physician, Montefiore Home and Hospital for Chronic Diseases, New York. Octavo, 639 pages, with 91 engravings and 18 plates. Cloth, $5.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1916.

It is essential that the physician in general practice, who is frequently called upon to treat pulmonary tuberculosis, should have at hand a work which will give him not only the etiology of the disease, but also the methods of treatment best adapted to the needs of the individual case and the conditions under which that treatment must be given to secure the best results and to expedite an ultimate recovery. Such a work has been prepared by Dr. Fishberg, whose wide experience as a specialist, practicing in the most congested city of America, and as a teacher of this subject in the University and Bellevue Hospital Medical College of New York, has given him a comprehensive grasp of the general practitioner's needs. His ability to meet these needs and present them in useful form is evident in every page of his book. It is at once completely authoritative and intensely practical.

At least 90 per cent. of tuberculosis patients must be cared for in their homes, not alone because of the inadequacy of institutional accommodations, but also because most patients can thus be cared for at less expense to themselves and to the community. Treatment in the home, however, may be fraught with imminent dangers not only to the patient but to other members of the household, unless the right methods are employed and proper precautions against infection are taken. Ideal as institutional treatment is in many cases, sanitarium methods cannot be applied in their entirety to patients who are not under the strict supervision and discipline prevailing in institutions.

The treatment of pulmonary tuberculosis presented in this book is based on the author's experience with patients in New York City. Some of them are inmates of institutions, but even these had to be cared for before admission and after their discharge. Emphasis is laid on the fact that in most cases the patient can be given the benefit of rest, fresh air and proper food in his home as well as in a sanitarium. The immense utility of sanitarium treatment is emphasized, but its limitations are carefully enumerated. Medicinal treatment has not been neg-

lected because it is in many cases of more value than some have been inclined to think. The most recent method of treatment, artificial pneumothorax, has been given in detail because of its efficiency in cases where everything else has failed. Dr. Fishberg has carefully studied the literature and has presented the facts as established by leading modern observers and investigators, co-ordinating, elucidating and supplementing the knowledge thus assembled with the results of his own specialized private and hospital practice. The result is a work which makes clear the problems encountered in the treatment of pulmonary tuberculosis and supplies the student with the basic knowledge essential to the successful handling of this disease. The usefulness of this work to the general practitioner can hardly be overestimated.

THE BASIS OF SYMPTOMS. The principles of Clinical Pathology. By Rudolph Krehl, Director of the Medical Clinics at Heidelberg, translated by Arthur F. Beifeld, M.D., with introduction by A. W. Hewlett, M.D. Professor of Internal Medicine, University of Michigan. Third American Edition. Cloth, 517 pages. Price $5.00. J. P. Lippincott Company, Philadelphia, Pa.

If one wishes to know the scientific basis of medicine he must possess this work. The author interprets the various pictures observed in his clinic from the standpoint of disturbed physiology. The different chapters are concerned with a consideration of the behavior of correlated organs under the influence of disturbed function. The author claims this to be essential in order to understand disease processes and how to determine the effect that disturbed coordination of different organs has upon the individual as a whole. Our interest in the scientific side of disease is stimulated and made practical by a close study of the writer's observations and deductions.

This Third American Edition will be sought for by every studious practitioner. It is a necessity for every clinician and progressive practitioner. We commend and admire it most unreservedly.

INTERNATIONAL CLINICS: A quarterly of illustrated clinical lectures and especially prepared original articles. Edited by H. R. Landes and staff of Associates. Volume I. XXVI. Series, 1916. J. P. Lipponcitt Company, Philadelphia, Pa. Price $2.00.

This issue is devoted to Therapy, Medicine Neurology, Public Health, Pathology, Gynecology and Surgery. Under each sub heading there will be found excellent articles that are well worth preserving and re-reading. In fact this issue may be judged as composed of nothing but what is timely, instructive and to the point of the subject discussed.

The series continues to maintain a high standard. It is particularly indicated by this volume. We have yet to be disappointed.

STUDIES IN ETHICS FOR NURSES. By Charlotte A. Aikens, Author of Hospital Management, Primary Studies for Nurses and Clinical Studies for Nurses, etc. 12mo of 320 pages. Philadelphia and London. W. B. Saunders Company, 1916. Cloth, $1.75 net.

The author endeavors to call attention to the need of the careful teaching of ethics and the observance of nursing ethics. The volume emphasizes the importance of the subject. It is a most excellent volume and every nurse, either in training or having graduated may read and re-read it with profit. She is bound to become a better nurse for having done so. The work merits a place on the reading table of every training school. Many doctors will find it to their profit to carefully read the entire volume and ponder over the excellent principles that are advanced. On the whole it is a timely monograph.

Miscellany

DO YOU KNOW THAT

Sags in roof-gutters may act as mosquito breeding places?

America's most valuable crop is babies?

The public cigar-cutter is a health menace?

The United States Public Health Service maintains a loan library of stereopticon slides?

The typhoid rate measures accurately community intelligence?

Whooping cough annually kills over ten thousand Americans?

Bad housing produces bad health?

Rocky Mountain spotted fever is spread by a wood-tick?

ALCOHOL AND PNEUMONIA.

The United States Public Health Service brands strong drink as the most efficient ally of pneumonia. It declares that alcohol is the handmaiden of the disease which produces 10 per cent of the deaths in the United States. This is no exaggeration. We have known for a long time that indulgence in alcoholic liquors lowers the individual vitality, and that the man who drinks is peculiarly susceptible to pneumonia. The United States Public Health Service is a conservative body. It does not engage in alarmist propaganda. In following out the line of its official duties it has brought forcefully to the general public a fact which will bear endless repetition. The liberal and continuous user of alcoholic drinks will do well to heed this warning, particularly at this season of the year when the gruesome death toll from pneumonia is being doubled.

Digitalysatum.—Digitalysatum, according to the Ernst Bischoff Co., Inc., is the dialyzed juice of fresh digitalis physiologically standardized and containing 12 per cent. alcohol. Sterisol-Digitalysatum appears to be the dialysate without alcohol diluted with equal parts of physiologic salt solution. The preparations are advertised with claims which imply superiority to all other digitalis preparations. The Council on Pharmacy and Chemistry holds that attempts to create the impression that Digitalysatum possesses all the virtues of digitalis without its chief disadvantage are to be condemned as likely to lead to incautious use of the preparation. The Council therefore declared Digitalysatum ineligible for New and Nonofficial Remedies (*Jour. A.M.A.*, Jan. 8, 1916, p. 135).

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Original Articles

THE USE OF CHLOROFORM AS AN OBSTETRICAL ANALGESIC.

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The mother of a patient of mine, who was herself the mother of twelve children, said to me, while her daughter was in the first stage of her first labor, that the pains of labor were the hardest to bear and the soonest forgotten. This philosophical multiparous mother also made the statement that she did not mind the severity of the pains, provided that she knew they were doing some good and hastening the delivery of the child. She also said, that she had noticed when present at the lying-in of another that those who made the most fuss had the least pain, measured by what she termed the length of the birth.

These aphorisms from one who spoke from experience, both subjectively and objectively, naturally lead to a consideration of pain as a surgical entity. Any pain, to be considered a cause for medical or surgical interference, must be so severe that it causes a disturbance of the circulation and produces surgical shock. During the first stage, the pains of labor may cause much inconvenience, may make the labor tedious, but they do not cause shock. Many times, a few simple procedures like a high enema, emptying the bladder, etc. will often do a great deal to lessen the unpleasant pains of the first stage. A quiet darkened room will help in bringing this about. Rarely if ever is any medication indicated. Of course it is admitted that pain affects different individuals differently and in some rare instances an ampoule of pantopon or opium, never morphine, may be necessary to produce quiet in a highly nervous patient. An hypodermic of sterile water has been known to produce excellent results.

A word might be said here parenthetically about pantopon, that it is an excellent medicament in that it lessens the sensitiveness to the labor pains without interfering with the strength of the uterine contractions.

A cursory review of the literature for the last fifteen years, anent the use of chloroform as an obstetrical anesthetic and analgesic, illicts the surprising fact that chloroform, while easy to take, easy to administer, and with few or no after effects, may cause poisoning and destruction of tissue. This has lead to numerous erroneous ideas about chloroform and its use in obstetrics, even though most, if not all of the cases of late chloroform poisoning, have occurred in surgical and not in obstetrical cases, so that for a long time chloroform has been a *non persona grata* among obstetricians.

Many experiments have been made by many different research workers upon the action of chloroform on the various tissues of the animal body. It might not be uninteresting to review some of these experiments, more or less at length and see how these different workers arrived at their conclusions.

Bevan and Favill, after an extensive review of the literature, report a death from chloroform narcosis in which the postmortem findings showed an advanced fatty degeneration of the liver lobules, with congestion of the lungs and spleen. The amount of chloroform given was not stated except that it took a large (?) amount to obtain anesthesia, and the operation which was an appendectomy and a left salpingo-oöphorectomy for a diseased appendix and a gangrenous left tube and ovary, in a child of 12½ years, was not long, although the exact time was not stated. These authors review the work of Offergeld, who performed numerous experiments with chloroform, ether, etc., upon rabbits and guinea-pigs. The author reached the conclusion that anesthesia with chloroform, produced tissue changes in the lungs, kidneys and liver, if animals were chloroformed for a long time. The amount of chloroform and the duration of the experiment were not stated. In one series of experiments, Offer-

geld found that in pregnant animals, the pregnancy *per se* did not favor fatty degeneration but that pregnancy, complicated with kidney lesions did. In his experiments with ether, he found that his animals died, even after thirty to sixty minute anesthesias, of pneumonia. And while Offergeld found the most marked change at death in the liver, he concludes that death was due to the production of a nephrolysin resulting from the effect of chloroform on the kidney cells. Another author reviewed by Bevan and Favill was Benno Müller. This research worker came to the conclusions, after experimenting upon fifty animals, that anesthesia with chloroform, chloral hydrate, bromethyl and chlorethyl, ether and mixtures of these, always produce changes in the internal organs, which appear as beginning fatty changes. Further, that pneumonia occurs frequently after ether and ether mixtures; because of a possible pneumonia after a first ether anesthesia, one should choose chloroform for a second. Also that these fatty changes usually disappear shortly after the anesthesia.

Bevan and Favill, after a careful study of their own case of chloroform poisoning and those of both ether and chloroform reported by others in the literature, say in conclusion that we are, at present, practically limited to chloroform and ether as general anesthetics. Each has its danger; each its special field in which one is safer than the other. We have as a rule, heretofore, employed chloroform, in cases in which there was a previous lung or kidney lesion, and in children, with the idea that it was less likely to produce nephritis and pneumonia, and have used ether in the bulk of our cases and felt that it was specially to be selected in heart lesions. But a new condition of hepatic insufficiency, one that favors the development of the late poisonous effects of chloroform, must be reckoned with. Either patients must be carefully examined for this hepatic insufficiency or some new less dangerous anesthetic must be discovered, which will not produce this marked poisonous sequela.

Several authors and research workers such as Gideon Wells, Howland, Whipple and Sperry, Mosiman, Opie, and Graham in this country and Kurdinowski, Roith, Hildebrandt and Fischer in Europe, have carried out exhaustive experiments on animals with chloroform and ether but mainly with the former. They have been able to show that given in large amounts and in great concentration, chloroform was able to produce the classical liver lesions, namely fatty degeneration of the central lobule of the liver, as well as congestion and parenchymatous tissue changes of other organs.

Time will not permit an exhaustive analysis of all their reports but mayhap one or two will suffice to bring out the keynote of this discussion and that is, *that chloroform given in a proper manner, by a proper method, by a trained anesthetist is both a safe and sane obstetrical analgesic.*

Before returning to a discussion of some of the reports of these authors, mentioned above, a few words upon anesthesia and analgesia may not be out of place. While I know that I may meet with some strong opposition in my contention of chloroform as an ideal anesthetic and while I may grant you have some slight reason for your argument, I will state emphatically and without retraction, that chloroform properly used is a safe and sane obstetrical analgesia. It all hinges on the difference between anesthesia and analgesia. The former means loss of feeling or sensation, especially loss of tactile sensibility, though the term is used for loss of any of the other senses, while analgesia denotes absence of sensibility to pain. The difference is one of degree perhaps and not of kind. Bearing this difference in mind when chloroform is given to produce obstetrical analgesia, to take the sharp edge off the labor pain, as it were, and usually a few drops suffice, the poisonous after effects never ensue. Some one has said that the practice of medicine would lose the hub of the wheel, if opium and its derivatives were taken away. The same would apply to obstetrics if chloroform were to be discarded.

As to some of the reports of the research workers on the late poisonous effects of chloroform upon animals, let us examine for a moment the work of Whipple and Sperry, who report on "Chloroform Poisoning, Liver Necrosis and Repair." These authors used dogs almost exclusively in their experiments and were able to show that narcosis for any considerable length of time with chloroform, causes central necrosis of the liver in animals (dogs); if extreme will cause death. Repair of the injured lobule may take place and the lobule restored in from two to three weeks. The amount of necrosis varies directly with the length and depth of the anesthesia and the amount of chloroform used. The analysis of one or two experiments, will show more clearly this fact. A dog weighing fourteen pounds (224 oz.) was given 2.25 oz. chloroform for four hours. The amount of chloroform was 1/100 of the body weight. In this same proportion, if an obstetrical patient, weighing 150 pounds were

given chloroform in the same proportion of her body weight, she would receive one and one-half pounds of chloroform in four hours or in the same period of time. She would no doubt have late chloroform poisoning, if she could be made to live that long. Another animal, a pregnant bitch, weighing thirty-eight pounds (608 oz.) received two ounces of chloroform or 1/304 of its body weight in three and one-half hours. A patient in labor weighing 151 pounds would receive in the same length of time 0.5 pounds or eight ounces in three and one-half hours. She might have some liver disturbance later.

How the chloroform was given, except by inhalation was not stated in a description of these experiments, but it proves that long continued deep anesthesia with chloroform will cause trouble. One fact must not be lost sight of and that is that chloroform, ether, etc. are poisonous when given in too large and too concentrie doses, just as morphine and strychnine are, if they were given in one or two grain doses.

Lengemann worked on dogs with chloroform and arrived at this result. He was unable to produce delayed chloroform poisoning in dogs by repeating inhalations, when the amount of chloroform was measured and just enough given to produce anesthesia and no more. In other words he did not slug his animals with chloroform but gave just enough to produce anesthesia.

As to the use of chloroform in my own experience, covering several hundred cases, my method is as follows: When called to see a patient in the first stage of labor, an attempt is made to make the patient comfortable. The usual preliminaries, such as plain enema, disinfection of the external genitalia, clipping of the pubic hair etc. are of course carried out. External examination to locate the presentation, position and the presenting part is made. The location, rate and quality of the fetal heart is determined. The patient is urged, if a primipara, to remain up and around in a semidarkened room. All unnecessary noise prohibited and the members of the family impressed with the idea that the patient must be kept quiet and not disturbed. Should the pains increase in volume and frequency as time goes on, the patient may or may not take to her bed, as a rule a little reassurance that every pain is helping just that much more is all that is necessary. If the first stage becomes long and tedious for the patient an hypo of pantopon or even of sterile water will do a great deal in making her more comfortable. When by a vaginal examination, it is illicited, that dilitation of the cervix is complete, the chloroform may be started by the drop method.

The proper method of giving chloroform to produce analgesia, and on this hinges the success or failure of its after effects, is as follows: An Esmarch inhalor is covered with two or three layers of gauze, sewed on if desired. The patient's face is smeared well with sterile vaselin and two or three drops of chloroform well mixed with air, allowed to fall on the mask from at least eighteen to twenty inches from the mask. Do not hold the chloroform container close to the mask under any circumstances, because then the patient gets the drug in a concentrated form. In the earlier stages of its administration, the chloroform is given by myself and its administration continued until just before the completion of the second stage or until my services are needed to protect the perineum, when the administration is turned over to a trained anesthetist or one who will give it under my direction. The points to be remembered are that first, only a few drops are needed at the beginning of a pain, and second, that these few drops must fall on the mask from the container at least eighteen to twenty inches from it so that each drop in its descent will mix with air, and so that when it strikes the mask, it will spread out over the mask. These two points are the *sine qua non* of the successful administration of chloroform in producing obstetrical analgesia. Of course it is needless to add that a pure uncontaminated product from a reliable drug house is also important.

When the head or presenting part of the child is about to slide over the perineum, a little more chloroform, administered in the same manner, may be given and the head or the part presenting, delivered between pains. Should a tear in the perineum occur, a few more drops given with the same precision will allow the introduction of the necessary stitches, which may be tied later after delivery of the placenta.

In conclusion I can only repeat and I wish I might write them out in letters of fire, what was said above, that chloroform, given in the proper way, by a proper method, by a not necessarily trained anesthetist, because the method is a simple non-intricate one, is a safe and sane way of producing obstetrical analgesia.

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ETHER IN OBSTETRICS.

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The history of ether in obstetric is interesting. Dr. Charles M. Green, at present Professor of Gynecology and Obstetrics, Emeritus, Harvard Medical School, has told me certain facts from his earlier experience and that of his predecessors which carry back to its historical beginnings with a personal note. In addition he kindly placed at my disposal his obstetrical library containing many old volumes in which may be traced the changing view point on the subject in the last sixty-eight years.

Ether was first used in obstetrics by Simpson in Edinburg Jan. 19, 1847 for a version. He concludes "that though the physical suffering could be annulled by the employment of ether inhalation the uterine contractions were not interfered with." April 7, 1847 N. C. Keep, M.D. administered ether in labor for the first time in America in Boston. In Boston, 1848, Prof. Walter Channing published "A Treatise in Etherization in Child-Birth." In 1849 Dr. Warren at the Massachusetts Hospital announced that on ether-vapor concentration depended its absorption.

With Simpson's case the medical world went to war, a war in methods and expression strikingly like our present war between pro and antagonists of "twilight-sleep;" and if we may believe the claims of Ramsbothem, Dean of London Obstetrics, a violent anti writing in 1850, the newspapers and periodicals of that day were as gladly radical and free from obstetrical judgment as certain conservative gentlemen consider them today. Ramsbothem in his "System of Obstetrics" second edition edited in the United States by Keating in 1855 (though this chapter was written earlier) settles the subject of ether and chloroform in childbirth, kills it, and buries it beneath an avalanche of seeming reason. Anesthesia in obstetrics didn't appeal to him. His experience was limited, it is true, and he proved in a way satisfactory to an author sympathetic with himself that sudden death, puerperal fever, mania, and hemiplegia, fits, peritonitis, and dropsy, in fact all ante and postpartum complications, were due to its use. His conclusion was that it was a low thing, only a sodden drunkenness, and that one who administered it to a high-bred lady cheapened the modesty and virtue of an English woman. Such was his conscientious reply to Professor Simpson's efforts to show the way. Simpson's rejoinder was simply and pointedly that he had noticed nothing good came except from London. Dr. Ramsbothem's opinion of its safety may be summarized in his only indication: "A transverse with ruptured membranes of some hours' standing who refuses operation, I should deem it my duty to deliver, and in the absence of sufficient attendants to permit me to work efficiently would use a narcotic." Yet a few years later writing a foot note for the same edition he hedges just a shade. Keating, the American Editor of the same edition takes occasion to disagree with the author's "most powerful and eloquent philippic" against anesthesia, also with his countrymen Meigs and Hodge, and admits ether for operation deliveries, especially versions.

Bedford of New York writing just prior to 1862 points out that narcosis in childbirth had been abused in that "one idea has seemed to prevail, i. e., the accomplishment of childbirth without pain." He concludes: "With such an unrestricted and indiscriminate employment of these agents two consequences were inevitable. viz. their abuse and to a degree loss of confidence in their virtues." His indication for anesthetics is for operations and cases of prolonged and excessively painful labor especially in connection with rigid os. He used it when in his judgment the patient was getting too tired, especially at the end of the first stage, and having rested his patient with ether, took it away and let the patient deliver herself if possible. Even when he did version under ether he warns that the anesthetic must be removed when the feet are at the vulva so that the woman's voluntary efforts may help complete the

birth. Of ether in ordinary labors he says: "Labor is a natural function and so long as normal it should not be interfered with." Further "The female, at the most interesting period of her life—the time of labor, should, all other things being equal, have her mind unclouded, her interest undisturbed, her judgment fully adequate to realize and appreciate the advent of a new and important era in her existence—the birth of her child."

At the beginning of Professor Green's obstetrical career he tells me a strong reaction against the use of ether in obstetrics had taken place; his teachers warned against much ether, the especial fear then being postpartum hemorrhage. Prior to this, enthusiasts had used ether in confinement many hours, even twelve or more, frequently to full surgical anesthesia part of the time, causing many unnecessary operative deliveries; and he tells me of one patient of his in the country who, having sent him word that she was in labor, etherized herself as fully as possible and each time she waked took more. On his arrival all pains had ceased and she did not take in labor for two days.

Lusk of New York, fourth edition 1892, says "In my own experience during the last sixteen years there have been comparatively few cases in which I have not used chloroform or ether in some stage. The result of my experience has been to make me a warm advocate of its wider employment on the one hand, while proclaiming the necessity of caution in its use upon the other." He urges that the proper administration is an art, though a simple one, and that it should be mastered by the practitioner.

Williams second edition 1908, speaking of chloroform which he prefers to ether, says "The choice of time is of great importance, nor should it be used before the latter part of the second stage when the head becomes visible at the vulva or at least until the perineum begins to bulge."

De Lee (1913) who favors ether after a large experience with chloroform, takes a broader view but confines the use of ether in a large measure to the second stage and operation deliveries.

This brief and familiar history of our subject shows progressively a general growth in the use of obstetrical narcosis. We are now facing a fairly large public demand for painless babies, a well organized and advertised attempt to change the old order of birth. A question of importance is, shall we meet or oppose this demand? I am for meeting it as far as is wise. It seems fair then that an attempt should be made to justify obstetrical anesthesia for the sole object of abolishing pain before the major part of this paper and symposium can have much point. This question is frequently met with quibble and the issue not faced squarely.

Everyone agrees that as a rule obstetrical operating requires anesthesia. The majority of good obstetricians go on the basis, at least theoretically, that their patients shall get along with as little additional anesthesia as possible; men differ temperamentally about this.. The cry of the magazine-mothers for painless childbirth, as unintelligent a cry as that of the advertised baby for a favorite soothing syrup, should not be allowed to influence the judgment of men who seek results.

But it has been pointed out in the past, especially by Reynolds and Newell, that a certain fairly common type of American women, overeducated and high strung, stands labor pain poorly and operation well, and even if many will not allow their remedy of primary Caesarean section for such women, all will, I think, admit they exist and believe they do better with as little labor pain as possible. We are familiar with nervous wrecks dating from childbirth, in which close examination reveals no pathological reason, and in certain of these too much pain superimposed on defective nervous resistance is the cause. These cases have usually been "banged through," a prolonged labor at the hands of a general man; as a rule they would have been better "sized-up" by a trained obstetrician and etherized. They hate the thought of another pregnancy and the fear of it leads to a distorted sex view point and sometimes domestic trouble. They are frequently women of courage but are supersensitive to pain. They tell their pregnant friend and she goes through her time with the story on her mind and it unduly sensitizes her. So much for this not so rare type.

I think, however, a broader application of obstetrical anesthesia is reasonable.. The application of the "home rule"—"what would one do in the case of his own family"—applied to obstetrical questions I believe should be applied to this question of anesthesia in labor, and when it is I think the obstetrician's motto on the subject will be not "as little as possible" but "as much as is safe." I say obstetrician in this connection because obstetrical anesthesia presupposes a trained attendant present, the responsible man, or his responsible assistant.

How many men suffering the severe cramps of a questionable appendix would refuse the slight narcotic that will somewhat deaden pain but not mask the symptoms. It appears to me that many men have regarded this matter of childbirth pain with the sublime serenity of the sure-to-be-unafflicted. I see no reason why, because a woman can stand pain she should have to if it can be safely abolished. Because labor pain is soon forgotten, as is so often said, makes it none the less real at the time. All pain is soon forgotten, but it has long been held that to relieve suffering is as much a part of the physician's duty as to hasten cure.

I think it should be possible to say honestly to any patient presenting herself in the early months of pregnancy, with the fear of labor in the background of her mind, and it usually is in her mind, "unless there is some reason why it will jeopardize the life of your baby you can have your pains relieved whenever you have had enough. You may now dismiss this matter from your mind."

Having thus attempted to justify the use of ether in obstetrics at any stage when safe I will proceed with the technic of its use. For purposes of discussion pregnancy and labor may be divided into four periods in which ether may be used. 1. Ether examination in pregnancy. 2. First stage. 3. Second stage. 4. Repair stage.

1. *Ether Examination.* It has been our custom if a careful examination of the pelvis becomes necessary in pregnancy to give ether as in pelvic tumors complicating pregnancy, retroverted pregnant uterus which cannot be replaced without anesthetic. The commoner necessity for this occurs in the last month of pregnancy, in border line cases, in primipara with high heads, and multipara with a disastrous history in previous labors or with unusually large babies. The ether examination in these cases takes place as late in the last month as is considered safe before labor starts, because in occasional instances labor has begun immediately following the examination due perhaps to the examination or the etherization with subsequent vomiting, or both. If the head cannot at this time, be put into the pelvis the question of elective Caesarean or test of labor is considered and tentatively settled, and arrangements made accordingly. At this examination it is possible to more accurately measure the pelvis, and to note any boney pelvic abnormalities, and the character of the pelvic musculature and the probable degree of relaxation, easier than without ether; and to estimate far more accurately the relation of the head to the pelvis, and to note more surely the presence or absence of overriding. Full surgical anesthesia is necessary to get the proper degree of relaxation. If labor is started by the proeedure, which is rare, it is in a case in which a small baby is desirable, so aside from the discomfort of taking and coming out of ether the procedure is not objectionable. If it is late in the last month and Caesarean seems inevitable, and the operator believes in doing Caesareans before labor begins, he can operate immediately, all things having been previously prepared, saving the patient an extra etherization.

2. *First Stage.* Ether in the first stage is not advised or used by most men. We give preference to single subcutaneous, one-fourth or one-sixth grain morphia toward the end when the pain is very severe. This is a wise form of anesthesia at this time, especially when the patient is getting tired with nagging pains which are not finishing the dilatation; it will frequently allow two or three hours' rest, after which the uterus often starts to work more effectively; this is especially true with cases of early ruptured membranes. In these cases careful watch must be kept on the lower segment for ring formation, the change in character of the pains due to the morphia frequently raising a suspicion of this which further investigation disproves. It is, however, frequently possible to give obstetrical ether enough to relieve pain even during the first stage without slowing up labor appreciably; the only way to tell is to try it; it must be remembered that it is not fair to use it freely enough to stop dilatation, that to force by ether an operation through a not fully dilated cervix is not justifiable merely to relieve pain. If on trial it appears, as it often will, that the ether does not slow up the pains it is allowable to use it in the first stage.

3. *Second Stage and Delivery.* In the second stage ether given obstetrically with each pain should be routine in normal cases. The average patient of intelligence and sensitiveness will work better with the top off the pains. It is frequently possible to produce a sense of exhilaration that persists between pains, and many primiparae and most multiparae will deliver themselves under ether so administered. During the delivery, assuming a normal delivery, ether invariably should be pushed to light surgical anesthesia when the chin can be checked and held behind the anus. By abolishing twisting and the voluntary straining efforts it is possible by carefully shelling the head out

to save the perineum and preserve asepsis far better than if the baby is taken "on the wing." Immediately the head is born ether should be removed. For the repair, if any, we use it again. We do not as a rule lay sutures with the patient conscious; if they are placed before the placenta is delivered it can usually be done on the end of the anesthetic of delivery time.

Unless used to giving obstetrical ether and of enough experience to determine its effect on the pains it should never be given in the first stage and its use in the second should be confined to that portion of the labor when delivery is certain.

There are three methods of giving obstetrical ether in vogue: The first is based on the idea of giving as little as possible and getting as much result as possible by the use of its and the physician's suggestion; if this does not take and the patient still notes pain well and good, she must have her pain to have her baby. It is unfortunate for her she is not more suggestable. Its success depends on the theory that if you make a woman think she has what she wants its the same as though she had it. The effect produced by the ether in this way is due to its smell and the technic consists in letting the patient have enough to smell and no more. The rest depends on the personalities of the patient and physician. My objection to this method is that it doesn't work for me. A second method of using ether consists in well etherizing the patient and then letting her come out to a point where pains begin and then holding her there with ether in the pains.. My objections to this method are first, that it stops the pains and so takes a considerable length of time to determine the effect of the obstetrical ether on the pains. Second, that a patient once surgically etherized for a time in the midst of labor generally works poorly afterwards. Third, that the patient is apt to vomit and is apt to go into an excitement stage and be difficult to control when the ether is lengthened. Fourth, that because of the above objections its applicability is distinctly limited to the end of the second stage with the head in the perineum.

The third method is an attempt with ether to abolish as much of each pain as possible without slowing up labor appreciably. I believe it is the correct way to use ether in obstetrics and shall therefore dwell on the technic at some length. To describe exactly how to give good obstetrical ether is not easy because with any special form of anesthesia, experience alone perfects. One modern text book description is to put fifteen drops of ether into an inhaler or on gauze and tell the patient to inhale it at the beginning of the pain. If ether is so administered it adds another to the reasons why chloroform is used in obstetrics. Fifteen drops of ether if on an open gauze, with the patient having no more definite instructions than to breath in at the beginning of pain, must produce a mild degree of narcosis—so mild as to place it in what I spoke of as the first or imaginary method. I grew up on drop ether on open gauze in gynecological etherizing and have tried it out extensively in obstetrics and can say unhesitatingly that it has no place in it. The closed cone, preferably made with a fresh towel well fitted to that individual's face, is the proper choice for obstetrical etherizing. A small amount—the fifteen drops if you like—of ether should be poured into it and the patient and her mucous membranes slowly accustomed to it with a few pains without attempting to produce the ultimate degree of narcosis. She is also shown how to take deep and rapid breaths as one demonstrates to a phthisis patient how best to breathe for auscultation. She should then be asked to raise a finger at the beginning of each pain, or the nurse's hand may be kept on the uterus. The cone is then well moistened with ether perhaps one-half ounce to begin with, and the patient is told to take six, seven or eight deep breaths depending on the length of the pain, as rapidly as possible as the pain begins. As the pain and deep breathing begin the cone is put rapidly to the face and held firmly there, excluding side air, through the first part of the pain. It takes about thirty seconds to take eight deep breaths as rapidly as possible. Labor pains last from thirty to ninety seconds. "The contraction is well under way before the patient feels the pain and continues a short time after the pain is gone. The educated hand laid on the abdomen can discover this point." (De Lee p. 131). In these thirty seconds breathing concentrated ether, which the patient does not fight because she soon finds it helps, it is hoped and it very frequently happens that the analgesic effect of so-called "primary ether" is obtained. The cone is removed then at about the acme of the pain, and as the pain fades analgesia fades and consciousness returns, ideally together. The method may be summarized as an attempt to give successive "primary ethers." The times given are of course not measured and vary with the individual case. I have merely attempted to analyze the procedure for each pain. This and nothing more constitutes first stage ether, and

second stage when the uterus is working well and the patient bearing down naturally; this bearing down of course in itself acts as a barrier against excessive ether inhalation because with inspiration held no more anesthetic gets to the patient. On the other hand when working and coaching a patient, especially the untrained primipara who is shirking a bit, it is well to count, as, breathe one, two, three, four, five, six. Shut the lips, bear down, now again, keep at it, now the pain is going, good, and ether off, keep pushing. In this instance the breathing should be somewhat shallower and more rapid. When the chin can be caught behind the anus and held the obstetrician signifies this condition to his etherizer and light but full surgical anesthesia with relaxation and abolition of voluntary efforts produced, the head is then shelled out leisurely, taking whatever time is necessary to preserve the perineum; immediately the head is born ether is removed, this is extremely important because the uterus is certainly relaxed under surgical anesthesia, the rest of the child is delivered either with the following pains or by careful traction if these are wanting, the perineal sutures laid and snapped. By the time the placenta is ready to come away the patient is able to answer questions, the sutures are gently tied and the patient turned in bed.

If the method has worked well, and it does as a rule, the result is a patient ready and willing to have more babies as far as labor is concerned. If it has not worked well, if the patient instead of working steadily either wholly conscious or exhilarated by understanding between pains, has become excited and uncontrollable, or if the ether has slowed the pains excessively, you have had the open choice of letting up on the ether and letting her have her pains or of pushing the ether and resorting to forceps. The choice presupposing a competent operator will depend on the factors in the case as follows: The degree of dilatation, the presentation position of the child in the pelvis, the size relation of the child's head to the pelvis, and the nervous system of the woman. You will not use ether at all with a high head if due to inlet narrowing—if the patient must mould it by. You will not push ether and operate through an undilated cervix except for definite operative indication. You will not push ether and operate on a posterior position, when rotation depends on effective pains. You will not push ether and extract a high breech that pains will mould to a low one and will perhaps deliver normally, it is especially with breeches that no chances of spoiling the contraction with ether should be taken, though here too it is fair to see if the pains will hold and the patient work better with light obstetrical ether. You will not push ether and operate early in a relatively tight bony pelvis where the safety of the child depends on a gradual moulding of the head, and where dragging an unmoulded head through with forceps will decidedly increase the risk of intercranial hemorrhage. In all these conditions you will let the mother take the pain for the sake of the child if ether works badly. On the other hand you will not let a high strung woman have a bit more pain than is absolutely necessary for the child; and I confess that I personally will push ether and operate cases with os fully dilated, head in pelvis, and transverse or anterior even if not rotated to the arch in an ample pelvis rather than let objectionable pain go on. It is here I consider pituition has its proved and safe field, and many cases under the above conditions where ether has slowed the pains, or unsuccessful obstetrical ether has made it necessary to use more may be delivered by it instead of by forceps. Try it first and operate if it does not work. I do operate these cases because I have never been able to convince myself that a careful forceps under the above mentioned conditions jeopardizes the child, and I am sure that I tear fewer perineums and the ones I do more favorably, and what is still more important preserve better asepsis with forceps under surgical anesthesia than by so-called normally delivering an unruly non-etherized patient "on the wing."

Has ether as used above any intrinsic danger to mother or child? It seems to me to have been shown that it has not; I have tried to show above when it is not indicated; there remains to consider what harm can come of it if given badly by the inexperienced; and a word regarding its use by the general practitioner.

It is very hard to kill anybody with ether, it is perhaps harder to kill a pregnant woman before the baby is born especially under the stimulation of an operative delivery. The ether deaths I have seen have been primarily drownings with mucus, they died rather from lack of air than excess of ether. Two in number, both in negroes in inexperienced hands and neither were pregnant. It is possible I believe to kill a baby in utero with too much ether without more than considerably over etherizing the mother. A very little attention on the part of the obstetrician in charge will assure that his patient is light enough to avoid this last, and that her air passages are open enough to avoid

the former misfortune. The danger in the case of the baby lies rather in assuming that some etherizer mildly experienced in surgical anesthesia is competent to etherize a prolonged and difficult operative delivery under trying circumstances, and to take the mind entirely from the patient's breathing and so permit the overetherization of the child; this of course is inexcusable but it has occurred. It is possible by badly timed and overenthusiastic obsterical ether to force patients to difficult and dangerous operative deliveries.

These remarks have special bearing on the use of ether in obstetrics in the practice of the general physician, who too often because his clientele will not recognize that obstetrics is surgery is obliged to trust his anesthetic to unor undertrained hands, the home trained nurse, the neighbor, or the husband. It is in general practice that ether is, and I think always will be, the anesthetic of choice, it is so safe and so handy to carry. The untrained man is far safer with it than with chloroform—statistics I think will bear me out. The young medically trained man, direct from hospital or school without anesthetic experience will learn more safely on his early patients at a time when an anesthetic death may mean his ruin, with ether than with any other anesthetic; and when he passes the cone to his patient's neighbor and blissfully ignorant of forceps, as he so often is at first, starts to deliver may worry less with ether than with any other anesthetic. I have seen many first and early ethers given by second year students on our out-patient district. They were as uneven as one would expect but real trouble is very rare. Most experienced etherizers among general practitioners, especially the older ones, that I have seen, and trained nurses without special training in obstetrical etherizing, etherize patients too deeply. There is a dictum in our parts put forth by some worthy of former times that danger lies in light rather than in deep etherization. To this in obstetrics I cannot subscribe, it is the *sine qua non* of good obstetrical etherizing to have the patient deep enough to be just relaxed, but light enough to quickly regain muscle tone with the birth of the child; if one err it should be in favor of lightness. The uterus must be tonically in shape to do its third stage work, and when the placenta is out shut down and stay so. This requires constant watchfulness, one cannot get the patient breathing stertorously and then proceed to watch the operation; as a rule the eye reflex will be present throughout.. This matter is very important, much more so of course than in a surgical case, because the action of the uterus does depend on the amount of ether, overetherization is a strong contributing cause to many postpartum hemorrhages; especially of course if the operator waits so many minutes instead of so many contractions before pushing on the placenta. So too an overetherized pulse at the end of a operation is misguiding and disconcerting to the operator.

Such, in brief, is the way I had come to use ether in obstetrics and it represents with many individual variations the way it is used in my part of the country.

In conclusion let me compare it briefly with the other anesthetics in common use from my standpoint. With chloroform I have had no experience; theoretically it is too dangerous to consider in comparison with ether in general use. It has I believe its place in certain complications of pregnancy. In Boston it must always be administered by the expert anesthetist, others have no training in it. In scopolamine-morphine anesthesia my personal experience is very limited. It has been used to some extent in the institutions with which I am connected, and I think the opinion of the men using it is that it has a place in obstetrics, in certain cases, especially in patients with a truly hysterical tendency, or in otherwise very nervous women. On the whole they have noticed little danger to the child. Their associates who have not used it are strongly opposed to its use, but their opinion being wholly theoretical is of relatively little value. I refrain from commenting on the shameless advertising it has afforded certain individuals and institutions in my city beyond saying that it has merely served to prejudice competent men and retard a just estimate of its true worth. It has been used there by people not ignorant perhaps of its use but ignorant of obstetrical axioms so that their results will be fallacious both ways.

I come now to speak of the gas-oxygen-ether. It is I think the choice of obstetrical anesthetics for the specialist. I shall only say of it here that for about six months I have used it whereever possible, that it has all the advantages of ether at any stage and so far as I have been able to see none of the disadvantages of ether alone. I use the Flagg apparatus, which has the typical dentist mask covering the nose and mouth, the rebreathing bag, an ether cup attachment. It seems to have no deadening influence on pain. The patient works better with it than with ether, it is possible to examine the pelvis in the office or hospital and then send the patients im-

mediately home. In a nutshell it seems safely to give us in a majority of cases really painless childbirth.

SCOPOLAMINE-MORPHINE IN LABOR.*

A STUDY OF TWENTY-ONE CONSECUTIVE CASES.

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While the use of scopolamine and morphine in labor has extended back over a great many years, we must all admit that the first report of it's use in sufficient quantity and in sufficient detail to be of value, came from the Freiburg clinic under Kronig and Gauss.

To receive our serious consideration, any reports on the use of these drugs in labor should have been the result of their systematic employment. The occasional giving of morphine or scopolamine without either following the memory tests of Gauss or the plan of Siegel, will naturally fail, and such failures should not be ascribed to the anesthetic itself so much as to the method of employment.

If one is to pass upon the virtues of a given treatment in his own hands, he must comply in every detail with the demands made by the author of that treatment. Reports therefore from those who have used drugs in tablet form or other drugs than those specifically recommended by Kronig and Gauss should be eliminated as a judgment for or against the method of these men. The well known fact of the unstability of drugs in tablet form and especially of scopolamine, should be given recognition when considering this subject. Drugs in tablet form should, under no conditions be used in obstetrics. Only those drugs which have been put up by thoroughly reliable firms in hermetically sealed ampoules, should be employed, and before an adverse criticism should be made, the drugs from the same source as employed by the author should be used. Even then, the skill of employment on the part of the obstetrician, should be taken into account. The drugs used in the cases mentioned in this report were obtained at the pharmacy of the Freiburg clinic by the writer one year ago.

We must consider the subject in the same light as we consider any other anesthetic. The problem is that of producing a certain depth of anesthesia and maintaining it uniformly at that depth by means of hypodermic injections. The original plan of Kronig and Gauss was to determine the depth of anesthesia by memory tests, and accurate records were made in about 5,000 cases as to the amounts of the drugs which were necessary to keep a given depth of amnesia and analgesia. After this number of cases had been recorded, Siegel undertook to make a composite of these records, and he found that this composite required administration of the drugs as follows:

	Beginning 1½ c. c. Scopolamine and 1 c. c. Narcophin.
¾ hr. after.	Beginning 1½ c. c. Scopolamine
1½ hr. after.	Beginning ½ c. c. Scopolamine and ½ c. c. Narcophin.
3 hr. after.	Beginning ½ c. c. Scopolamine
4½ hr. after.	Beginning ½ c. c. Scopolamine
6 hr. after.	Beginning ½ c. c. Scopolamine and ½ c. c. Narcophin.
7½ hr. after.	Beginning ½ c. c. Scopolamine
9 hr. after.	Beginning ½ c. c. Scopolamine and ½ c. c. Narcophin.

(1 c. c. scopolamine equals 1/200 gr.)
(1 c. c. narcophin equals ⅙ gr. morphine.)

and so forth each 1½ hour, ½ c. c. of scopolamine. Every third dose of scopolamine is combined with ½ c. c. narcophin. These injections must be given sub-cutaneously.

At about the time of adopting this technic, morphine was replaced by narcophin which is about 30 per cent. morphine. These drugs were intended to hold the patient in a moderate degree of amnesia and analgesia but was not intended to be sufficient to prevent the severe pain incident to the head passing the perineum. Siegel depends upon inhalation anesthesia, usually ethyl chloride, as an adjuvant to the hypodermic drugs for this part of the labor.

The whole object of using any anesthesia in labor is to prevent or overcome pain. The writer takes the view that any method is successful if the pain has been relieved or prevented. In fact, the ideal condition is to have no loss of memory, if this can be had and at the same time can be without pain. The abolishment of pain therefore, and not of memory, should be the goal and in many cases this result can be obtained. As a rule, however, the loss of memory accompanies the abolishment of pain. If pain is abolished, the case is successful whether the memory remains or not.

The general picture of a patient under scopolamine-narcophin anesthesia, is usually quite constant. Within thirty minutes after the first injection, the pains are noticeably decreased.

*Read before Section on Gynecology and Obstetrics, Sept. 1, 1915.

In thirty minutes after the second injection, the pain is usually abolished entirely or so slight as to be of little importance to the patient. Very few patients remember the third injection given one and one-half hours after the first. After this, the patient sleeps between pains, arouses with each pain, may turn over or cry out for thirty seconds, and then go back to sleep. If, however, one holds his hand on the uterus, he will observe that the pain really begins one-half minute before the patient cries out, and lasts about that long after she has returned to sleep, showing that only the crest of the pain wave causes any symptoms, whereas before, the actual pain lasted during the whole pain wave. A certain percentage of patients may show some delirium. Patients never remember anything that happens while in the state of even the mildest delirium.

In those cases which are well advanced in labor, and where the pains are very frequent and very violent before the injections are begun, the idea of pain is often carried in the mind of the patient and she will continue to say that she suffers intensely and that the obstetrician is doing nothing to relieve her pain as was promised. This seems so real and unlike delirium that one sometimes errs by giving too much of the drugs, hoping to give enough to relieve the alleged pain. After the labor, however, the patient invariably denies that she made any such statement and declares that she knew nothing of what was going on.

About an hour after one labor where the woman was quite talkative, and apparently conscious of the labor, the husband asked her if she suffered much, whereupon she blinked and said "I guess I must have been asleep." She did not know that the labor had been completed. Usually the sleep is so light that on being addressed, the patient awakens easily and generally replies intelligently.

If one is not careful during examinations, the pain incident to making them may be carried in the patient's mind as if it were the whole labor, and declare that she suffered during the whole time. This is proven to be untrue by the fact that she did not know of any other incident that happened during labor. In no case, has the writer found the dose as outlined by Siegel, to be excessive, but in many cases considerably less amounts will give satisfactory results. Patients sometimes will be as clear and intelligent throughout the whole labor as when normal, and yet will feel no pain. These cases are indeed dramatic.

During the past year, the writer has employed scopolamine-narcophin anesthesia in twenty-one obstetric cases. Of these, eleven were delivered at home and ten at the same hospital. As a whole, as far as the anesthesia is concerned, those in the home have done as well or better, than those in the hospital. The advantages of the hospital are solely in the facilities and extra available help which might be needed in the operative cases. The disadvantages of a hospital are that it is usually noisy, and they are usually too busy to keep a competent nurse constantly on the case. In the eleven cases delivered at home, the same assistant, one trained in the author's methods, was always present.

In all the cases, records have been made every hour from the beginning of the administration of the drug until the termination of labor. These consisted of observations concerning pulse; fetal heart tones; respiration; temperature; frequency, duration and force of pains; examinations; catheterizations; and operations; the time, kind and amount of injections and their effect as the subjective symptoms of pain; thirst; and fatigue; and the objective symptoms of sleep, color, excitation, and the influence on pains.

The ages of the patients: Seven were from 19 to 24; five from 25 to 29; four from 30 to 34; and five were from 37 to 40. Of the fourteen primipara, six were between 19 and 25; five between 29 to 33; and three were respectively 37, 40 and 42.

One primipara of 40 had a marked mitral insufficiency. One aged 42 was much below average muscular development and general strength, and was anemic. Both delivered without instruments or appreciable fatigue, and had only insignificant lacerations.

The average duration of time between first dose and delivery was 5.6 hours. An average of .047 grams of narcophin (morphine .016 or gr. ¼) and 1/100 plus of scopolamine were used.

Of the twenty-one cases, nineteen (90 per cent.) declared they had experienced birth entirely without pain, and the other two had only a slight degree of pain. There were no complete failures.

Twenty-one mothers are living and well, as are the twenty-one babies which were delivered. There were no twins.

Fifteen cases received obstetrical degree anesthesia for an average of thirty-five minutes. These ranged from five minutes to two hours. Two cases made so much disturbance when ether was started that it had to be discontinued; yet they both had painless births. No doubt

several of the others would have had a similar experience had anesthesia been withheld. Four cases received surgical degree anesthesia for forceps operations.

Thirteen cases received ½ to 2 cubic centimeters of pituitrin which overcame any tendency toward retarding of pains or lessening of efficiency, without any bad effects.

Of the four cases delivered by forceps, two were difficult medium forceps in old primipara for occiput posterior positions, and would have been forceps cases under any method. One was a low forceps in a very rigid perineum of a primipara of 37, after twenty-four hours good pains and sixteen hours under scopolamine-morphine. The fourth forceps operation was done simply to save time, in a primipara whose urine when boiled became solid with albumin. She had been under scopolamine-narcophin for eight and one-half hours before forceps were used, and the head was in the perineum.

Postpartem hemorrhage occurred but once, in a large rugged woman, para three, but was not serious.

BABIES.

Of the twenty-one babies, fourteen cried normally at birth, and with seven some mild resuscitation methods were employed. Our experience has been that these babies usually do as well to leave them alone, as to attempt resuscitation. On two cases, we tried to use an infant lungmotor, but without success, in fact in both cases, spontaneous attempts to breathe on the part of the babies, were prevented by the apparatus being over their faces. No apnea has been observed which has not also been observed to an equal or greater degree in cases where only ether or chloroform has been given. There have been no different after conditions in the babies than in other cases.

It is only fair in judging this treatment to look at the results of former methods. A study of 3,000 birth reports in Kalamazoo shows an infant death rate of 6 per cent. No doubt this is as good as the average city and should be kept in mind when judging new methods.

From experiences had in these cases, we have learned that this is a very arduous kind of work. It is adding to the obstetrical responsibilities, those of a difficult anesthetic. We do not begin ether anesthesia, and then make a call while the patient is under its influence. Similarly, we should not do so here. It is necessary that the obstetrician remain on the case constantly during the administration of the drugs and should have at his side, a trained, permanent nurse-assistant. It therefore, increases the cost per case to the obstetrician because he must refuse all other work while a cases is in progress.

The occaional delay in respiration on the part of the baby, may give the obstetrician some worry until he can judge between those which are simply apneic and those which are asphyxiated. This is the only objection which I have to offer, and this is not sufficient to condemn the method. All the asphyxias occurred in the early cases, while more narcophin was used. than later.

These disadvantages are more than offset by the advantages. Perhaps the most convincing argument in its favor is the testimony of the patients, which in every case related above is enthusiastically favorable. This opinion naturally is based mostly on the freedom from pain, but is also because they experience little or no exhaustion after labor is completed. The enforced closer, hourly observation and records are safeguards to the patient which are usually not obtained in other methods.

The compactness and portability of the drugs and hypodermic syringe is a great advantage for this method, as is the fact that it does not require a special anesthetic assistant, which in turn adds expense. The obstetrician and his specially trained nurse-assistant can conduct these cases alone and in homes if necessary. The low cost is also in its favor; the cost even in war times averaging about a dollar per case.

It worked well in one pre-eclamptic case, and theoretically should help to prevent convulsions. It is strongly indicated in cases with heart disease and impaired strength; and in nephritis should cause less damage than ether or chloroform. It is indicated in the highly sensitive woman and those who lack self control.

In judging any new procedure, we are very apt to place too much importance on events which are really accidental. During the time this group of cases has been observed and which has had no infant mortality, the writer has delivered two dead babies under the other methods. A confrere also recently delivered a normal woman without any anesthesia, of a baby apparently normal except that there was some cyanosis which persisted rather stubbornly except when resuscitation measures were employed. Next day the baby died apparently from some respiratory disturbance. A thorough postmortem was held, including detailed examination of the brain, as well as abdominal and thoracic organs. Absolutely no cause of death could be determined. No cause being found, one would naturally have charged the death up

to scopolamine-narcophin or any other unusual method, had it been employed.

Last week, Dr. X and myself were delivering respectively two primipara in the same hospital and at the same time. My own was a scopolamine-morphine one, and went ideally for both mother and babe. The case of Dr. X, where this anesthesia was not used, went badly; the pains became ineffective even under pituitrin, and after many hours' labor, a difficult high forceps was done with much injury to both mother and babe; the operation being done by myself. Now, had the cases been transposed and had I drawn the difficult case and used the twilight method, the criticism naturally, though unjustly, would have followed, that the method was to blame for the need of operation with its bad effects.

The question to answer is which method has the largest percentage of results as observed in a large series of cases. My own opinion is that there is here a freedom from lacerations due to the greater gentleness of delivery; that there is less need of forceps since by this plan the patient can continue the labor longer without exhaustion; and having painless labors, she will therefore have less worry and depression in future pregnancies, and that these more than offset the occasional detrimental condition which may be ascribed to the method.

Being safe for the mother and having no higher mortality of the baby, it really resolves itself into a problem of the *doctor* and not of the patient. I believe that in the hands of a competent obstetrician who is willing to take the time, it is a safe method.

NITROUS OXID-OXYGEN ANALGESIA IN OBSTETRICS.*

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Labor pains date back to antiquity. Eve was undoubtedly the first woman to suffer the pangs of childbirth. Yet we know from the records of primitive races that labor was usually easy and relatively free from pain. However, civilization with its artificial dress and customs has rendered woman more of a hot-house product and physically less fit to perpetuate the race. While among the women of civilized races easy labors are not rare, most women are in labor several hours, and unaided suffer considerable and often very severe pain.

Attempts to relieve the suffering of childbirth also date back to antiquity. Simpson in writing on the history of anesthetics in midwifery quotes from the Greek writers and refers to the persecution of witches who tried to abolish its pains through charms and other means. During the years since Simpson introduced ether and chloroform into obstetrical practice many drugs have been used with varying degrees of success and failure in the attempt to secure painless childbirth.

The dangers accompanying the prolonged use of ether and chloroform were early recognized, and following the recent conclusive experiments of laboratory investigators their use has been limited to the end of the second stage.

Nitrous oxid and oxygen analgesia was used by Klikowitsch in 1880 and Winckel in 1881. After using this analgesia in fifty cases Winckel said that it was much to be recommended. Later he writes: "The apparatus, which consists of a rubber bag like a pillow, is inconvenient, it must be confessed, but this is subordinate; in abnormally painful labors it is at any rate an extremely important remedy." Owing to its cost, the crudeness of the apparatus used, and the fact that it was often given to the stage of asphyxia, nitrous oxid did not come into general use at that time.

Ten years ago, Dr. J. C. Webster of Chicago began to use nitrous oxid and oxygen in operative obstetrics when ether and chloroform were contraindicated. In 1909, the writer gave the anesthetic when he performed the first cesarean section under nitrous oxid and oxygen. Its use was gradually extended to all classes of cases, but except in one or two, its use was limited to the end of the second stage as the hospital was not willing to bear the supposedly excessive cost of its prolonged administration, and we did not then appreciate its great value in abolishing the shock of labor. Arthur Guedel of Indianapolis, in 1911, advocated nitrous oxid-air analgesia during the second stage of labor, but our first knowledge of its prolonged use in America was in July, 1913, when Drs. Lynch and Hoag confined the daughter of a Mr. Clark, the maker of a gas apparatus, and the analgesia was administered for more than six hours. Dr. Lynch was very enthusiastic over the results obtained in this case and since then has used it constantly. Dr. Heaney, who began its extended use about the same time, is equally enthusiastic.

The nitrous oxid-oxygen analgesia as used in obstetrics is similar to that used extensively by dentists, but differs in that it is not continuous. For the benefit of this association I

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have attempted to outline the technic used at the Presbyterian Hospital, Chicago. This technic has been developed gradually, and is used with minor variations by the various members of the Obstetrical Staff. I believe with Dr. F. W. Lynch that a physician will best use this method after carefully testing the effects of nitrous oxid and oxygen on himself.

The first consideration in this work is the choice of a gas machine. From our experience we would make the following suggestions: 1. The apparatus should be a nitrous oxid-oxygen mixer as the use of straight nitrous oxid has marked limitation. 2. It should have some type of automatic regulators which will maintain a constant pressure in the gas bags. 3. The mixture of the gases should be controlled by a single lever or valve. 4. Portability is desirable but is secondary to usefulness.

In administering the analgesia, economy of the gases may be secured in the following ways: 1. Be certain that there is no leakage of the gas from the tops of the cylinders or from any of the connections. 2. Never more than half fill the gas bags and usually keep them about one-third distended. 3. Use the minimum number of regular deep inhalations necessary to secure the analgesia. 4. Do not anesthetize the patient. 5. Use the large cylinders of nitrous oxid and oxygen in hospital practice.

The automatic regulators on the apparatus we employ are set at a point which allows the bags to become about one-third distended when the full pressure of the gases is turned on. In case such regulators are not used the bags may be half filled between the uterine contractions. For the women who will co-operate with the physician, the nasal inhaler is useful, but for mouth breathers, hysterical women and those who will not follow instructions the face inhaler is necessary. On admission to the hospital the patient has the usual preparation for delivery. She is told that the nitrous oxid will be given just as soon as her contractions become painful. Generally the patient will not ask for the analgesia until the cervix is fairly well dilated and the uterine contractions are coming every few minutes. She is then placed on the delivery bed and taught how to breathe the gases, and if the labor is well advanced how to work. This may at times be difficult, but it is usually accomplished during a few contractions. It is advisable to have the room slightly darkened and free from all unnecessary noise and conversation. Cold compresses on the forehead covering the eyes are often soothing.

With the first suggestion of a uterine contraction the inhaler is placed in position and the gas turned on. The patient is given two deep inhalations of pure nitrous oxid; 5 per cent. oxygen is added with the third inhalation, and from 10 to 20 per cent. is given subsequently. The percentages vary greatly and must be determined for each patient. If the labor is well advanced the patient is instructed to hold her breath and bear down after the fourth or fifth inhalation. However, if it is observed that two or three inhalations will produce analgesia, she should be told to bear down as soon as analgesia is assured. She is then given another inhalation and may again bear down. The release valve is now closed to prevent further escape of the gases, but instead of removing the inhaler the lower edge is raised sufficiently to allow the breathing of air, and it is removed only at the end of the contraction. The patient is then told to lie quietly and rest until the beginning of the next contraction.

It is advisable that the physician follow the progress of the labor by means of rectal examinations. A vaginal examination is rarely necessary in a normal case. Unless the physician is alert the patient, especially if she is a multipara, may precipitate. Although the analgesia has no appreciable effect on the child the fetal heart rate should be followed with the usual care.

During the analgesia the patient holds the straps which are fastened to the foot of the bed and makes traction on them during the bearing down efforts of the second stage. When the caput appears at the vulva she is warned that she must immediately obey every instruction, and she bears down or does not at the request of the obstetrician. More nitrous oxid is often required during delivery of the head, but the patient should not become anesthetized as she will then lose her self control and may struggle as with ether.

The nurse or some member of the family may be taught to administer the analgesia for the ordinary normal obstetrical case.

Nitrous oxid and oxygen is recognized as the safest of anesthetics. Nitrous oxid can only cause death by asphyxia, and in giving the analgesia this is impossible owing to the use of oxygen and the few inhalations required. It is quickly eliminated and has no deleterious effects on the mother or child. The cost is not excessive. Using the small tanks I have in one case maintained analgesia for nearly eleven hours at a cost of six dollars.

The belief that pain is an inevitable accompaniment of labor has in the past reconciled

mothers to endure it. But they are now demanding relief and justly. The nitrous oxid-oxygen analgesia is a sane, safe and certain method of relieving the pangs of childbirth.

25 E. Washington St.

DISCUSSION

Dr. Bell: It occurred to me, while sitting here, that we could here and now get a very decided answer to the old, time-honored question of whether chloroform or ether is preferable in obstetrics, and I think we will all be satisfied to have a vote on the question. We have a representative body of obstetricians in the room, and I want to ask all those who use chloroform—now I want you to be honest about it—who use chloroform in labor to hold up their hands. (Show of hands.)

I count sixty-five.

Those who use ether.

I counted twelve.

Dr. Kellogg, you see how the doctors are choosing here.

Now, that is not criticism on the administration of ether, gentlemen. In our clinic in Harper, in Detroit, we use ether exclusively. Now, why do the vast majority of men—we have a representative body here—why do they use chloroform in preference to ether? They all know—it has been demonstrated conclusively, I think—that ether is less dangerous than chloroform, and still the doctors keep on using chloroform. Why is it?

My opinion is this, chloroform is easy to give. It does not distress the patient so much, it does not produce that sense of suffocation that ether does; it is easy to give; it will not explode while you are giving it in a room where there is gas; it is not seriously dangerous, I believe. Notwithstanding what some men say about the administration of chloroform, I do not believe that it is seriously dangerous.

The vast majority of men, at least those who have graduated and are out practicing now, have been taught to give chloroform, in the Middle West, I think the majority, I think we can safely say anyway 75 per cent., and they give chloroform intelligently. They know that there is danger, of course, as there is more or less with ether, and it is easily given to the patient. The patients take it more readily than they do ether, and unless it is given for a long period of time, I do not believe it is dangerous. That is my opinion of the administration of chloroform, why it is preferred to ether.

Dr. Morley's paper I thoroughly agree with, I think, with possibly two exceptions. One statement he made, that there is no shock in the first stage of labor; that I cannot subscribe to, I believe that there is shock. The first stage of labor ends with complete dilatation of the cervix. By that time some women have suffered a lot of pain, and pain will produce shock; therefore I believe that there is some shock produced by the first stage of labor.

There is another possibility, or another point that the doctor did not discuss in his paper, and that is the question of whether or not you do not in some instances produce hemorrhagic disease in the infant by prolonged chloroform labor. That is a question, whether or not some of these little babies that on the third or fourth or fifth day start bleeding, and become more or less comatose and die of so-called hemorrhagic diseases of infants, whether or not the prolonged use of chloroform does not produce that condition in the infant.

I am sorry Dr. Kellogg did not take up the question of the destructive changes in the liver by ether. I think that Clark and his associates in Philadelphia demonstrated clearly that prolonged ether administration will produce these changes in the liver cells, so that I think that ether is not entirely without danger.

My opinion is that either of these anesthetics is safe when given properly, and for not too long a period of time. I think that is where the whole trouble is, if we give either one, chloroform or ether, for a long period of time, we are likely to have these changes in the liver which subsequently, in the puerperal stage, result disastrously to the mother, and frequently to the infant.

There is a question about the determining of the susceptibility to the toxemia produced by these anesthetics in certain women. Can we tell beforehand? I think a little light is shed along that line by Fisher with his little aniline red test of the urine. It will determine the condition which we call acidosis, which is undoubtedly very similar to that of poisoning which we find in pregnant women. I believe there ought to be a practice of testing the urine of every woman to determine whether or not they can stand any surgical anesthesia.

I have had no experience with the nitrous oxide and oxygen anesthetic, therefore can say nothing at all on that score. I have had limited experience with the *"dacmmer schlaf,"* and my experience has been almost identical with that of Dr. Boys except I think he has been a little more fortunate than I have been, especially with the babies. In the fifteen cases we have had three so-called "blue babies," two quite markedly blue, bluer than I have ever seen with any other anesthetic. The babies all lived, but the condition is a peculiar one. The Germans describe it as apnoeia and try to make a distinction between it and asphyxia. The condition sometimes resembles the limited asphyxia as we see it in ordinary child birth. It is a peculiar, uncanny condition, and Kronig and Gauss tell us: "Don't worry, the baby will come around, they all recover." But I have not arrived at that stage yet where I will leave the baby alone, I want to do something to get that baby to breathe. It will cry when born in a perfectly normal way, you tie the cord, get them out of the room, in a little while the nurse comes back, "Doctor, the baby is not breathing." You go in, find the baby lying, you give it a little slap and it is not breathing, but if you open the eyes it gives a peculiar demonstration. That is my experience with three "blue babies;" the others were all right. Two of them I have actually resorted to artificial breathing, the third one breathed with the ordinary "slapping," and sprinkling with the cold water. But I must confess, I cannot lay that baby to one side and say that it will be all right.

With regard to the mothers with four out of our series of fifteen the results have been somewhat unsatisfactory, the patients were noisy and boisterous, when we started to give them ether. (We give ether in, I think, the vast majority, fully 75 per cent. of the cases, we give ether to terminate the labor, to get them soothed for the final stage.) We had

four cases that were unsatisfactory, although they afterwards, after everything was all over, they claimed they did not feel very much pain, and the mothers preferred that form of anesthesia to have the baby in any other way. They were all satisfied with their cases. I think we had about seven or eight that were absolutely ideal. They were of the nervous type that Dr. Boys spoke of, and seemed to respond to the treatment better. They went through the process just as he has described, dropped off about one-half or three-quarters of an hour, then the administration of the second dose and from that time on it was just a case of sleeping and moaning at the height of the wave of pain. In one case I was sitting at the bed, and they expected it would take half to three-quarter hour until the baby was to be born, and I noticed the patient moaned a little longer than usual, the head was bulging and the child would have been born right away if I had not taken occasion to look at that moment. In fact, in the majority of cases the women knew absolutely nothing after they had had the second injection, a few of the others remembered the time that we started the ether and that was about all.

My idea is that we do not need to stick strictly to any prescribed formula. I think the object is to get the woman to deliver the child without pain, without suffering, and we can use the *"daemmer schlaf,"* or use ether or chloroform if we have it, but it is all a matter of the individual case, and the judgment of the man who is attending. You have got to be a good obstetrician, you have got to know the indications for the drugs, and you have got to know the peculiarities of the patient, and the mechanism of labor, in other words, you have got to be a good obstetrician to get good results, that is my idea.

Dr. William Fuller: I have been practicing about fifty years, and I have attended a great many obstetrical cases. You asked about the administration of chloroform, I do always use chloroform, and always considered it perfectly safe, although I administered it in such a way that the patient was conscious most of the time, and I would ask her to take a long breath, "Now breathe quickly and inhale just when the pain is coming on," and I have kept these patients under chloroform for several hours, as well as in surgical cases, as much as at least five or six hours, and I have never seen any harm come from it. I had a large practice when I was in Montreal, and a consulting practice also, and I cannot remember either a baby or a woman dying from anything relative to the administration of chloroform, and of course I do not propose to give it up yet, unless I give up the practice of medicine.

Dr. Morley: I have not anything more to add to my paper, except that Dr. Bell spoke about shock. I did not mean to convey the idea that the patients never had shock in the first stage of labor. I simply mean to convey the idea that the pain, to be considered a surgical entity, had to produce shock. Sometimes it happens that patients are shocked in the first stage of labor, at least if that was your question, Doctor Bell. And then he spoke about hemorrhagic diseases in infants from chloroform. I remember one case that I had with a hemorrhagic disease in an infant, and that was in a patient whom I had delivered once or twice before, and at this time it was rather a precipitate labor, at least when I got there, there was just about time to get ready and put on my gloves and then take the baby, in fact, it came so fast that there was a slight tear in the perineum, which I repaired after the baby was born under chloroform, and this baby did have the hemorrhagic disease, that is, blood in the stool. That was the only case. You would not say that came from chloroform.

Dr. Kellogg: I do not believe that there is any more hemorrhagic disease under chloroform than under ether, because I think there have been, in the 28,000 cases in the lying-in hospital in Boston, some forty cases of hemorrhagic disease where there has been nothing used but ether, and I think that is well up with the statistical average. I think that as far as ether goes, and experiments of ether on patients go, and experiments on dogs go, that there is not very much relationship between it.

I think that the doctor, speaking of chloroform, has pointed out that you have got to give—going by the relative weight—you have got to give about a tub of chloroform to get the same result in the patient that you get with the dog, and I think that applies still more to ether. There has never been, in the 28,000 cases delivered in the house, in the last six years, a case of death attributed to ether but what it was demonstrated she had suffered lesions, at least that did not previously have a definite toxemic jaundice, which presumably accompanied the later lesions and from which she presumably died.

I think about ether, one reason that it has not been used in this part of the country is because most people have taken up chloroform and have liked it so well that they have not tried and they do not know how much you can do with the ether. They think that it acts slowly, and I think that the teaching of the administration of obstetrical ether is bad, because it is taught to be given almost as though it were chloroform. We have had one anasthol death, its analgesic or anesthetic effect being largely due to the chloroform. There is no question but that death came from its mal-administration. The case was started with anasthol, then shifted on to ether, then back to chloroform, then to anasthol, which I think is a notoriously bad way to give it.

Dr. Boys: I have used chloroform, I have used ether, I have used scopolamine morphine, I have used for surgical purposes nitrous oxide and oxygen for several years. It is certainly the ideal anesthetic if folks can stand the price. There is no reason why it would not be an ideal obstetrical anesthesia except that there is the question of expense, to get them under quickly and as quickly out again. It seems to me ideal. There is no question in my mind that it is a very desirable anesthetic in obstetrics. I have not used it in obstetrics, although we have used it in other cases for a number of years. It seems to me it is a cumbersome thing to carry around, although it is not necessary to have an expert anesthetist to administer it. We have always thought it required an unusual skill in an anesthetist to give nitrous oxygen. The fact is that it does not need to be so deep, which makes it safe in the hands of the lesser experienced man. The carrying of tanks of gas is not an easy thing to do. Perhaps some device may be made so that it can be carried about more easily. The question with us in obstetrics is that of cost. The cost is so great that

if we add any further to it we have to make it for the love of science. On the other hand, it may make an excuse that we can charge what we should charge. I know that is to a certain extent true in scopolamine-morphine work.

I think the advantages of chloroform are that it is handy, and, like religion and other things, it is the way we grew up. We are the victims of what we have been taught. Chloroform certainly is responsive, so far as giving is concerned, if we do not give it too deeply, naturally we will not get the bad results. The worst objection I have to chloroform is that we cannot use it in a room with light without asphyxiation of yourself and assistants and everybody in the room. I know of one case where three doctors had to retire from the room leaving a very critical case, because the chloroform was set free by open lights. With ether, on the other hand, you know you are safe; it will not explode or cause any disturbance. All you have to do is to set the light higher than the ether. The odor generated by ether, as of chloroform, passes into thin air, while some pungent odor connected with it is not distressing and need not stop any one from what they are doing.

In reference to scopolamine-morphine, the most enthusiastic people I have for it are those who have had babies. I have one who had four babies before this and every one had to be delivered with instruments. This baby was delivered normally. She said she was from Missouri and had to be shown, and she was willing to try. She was one of those nervous type of people that was exactly adapted to this form of anesthetic. The women who have had babies and know what it is are the ones that are enthusiastic over it. The primiparae have nothing to check up with and therefore they think it is just normal, that is, the result, and it is the mothers, therefore, that are the most enthusiastic in favor of this method.

Somebody asked where we get the drugs. I fortunately had sufficient to last for these cases. These drugs can be obtained by the Marcy Company, there are three firms. A drug company of Kalamazoo got them for me. That shows that they are available in this country.

One doctor asked about the condition surrounding these patients, that is as to light, noise, etc. In the Freiberg clinic they delivered four women at the same time. It is just like a nursery; they do not all have their pains synchronously, and so one is passing through pain while the other is wanting to sleep, so there is no ideal condition as to light and noise. As a rule there are five or six Americans sticking around to see what is going on in the "twilight line," so there are the nurses that are required, and there are four or five Americans besides four patients together in this same room about the size of this, all at the same time. I cannot conceive of that being a noiseless, lightless sort of room in which to conduct cases. Most of those are charity cases, and they go to that particular room. Private patients go to private rooms under more favorable conditions. I believe light wakes them up as much as noise. Of course I should like to shut noise and light off, but I believe they are minor factors in cases.

Dr. Davis: It seems to me that the first duty of a physician in regard to an obstetrical case is to make that case just as easy for the woman as possible, and that, of course, necessitates his using the method which he has at hand. And, furthermore, if he has chloroform and nothing else, use the chloroform. If he has ether, use the ether, use the method which he can. But in using a method there are several things which he wants to take into consideration. It is the duty of every physician to do the safest thing by his patient, and before we come to decide just what we should use as an obstetrical analgesic, or as an obstetrical anesthetic, let us consider for just a minute the relative safety of the various anesthetics.

In 1909, Thatcher prepared a report on the use of scopolamine and morphine in surgery and obstetrics. In that report he says that H. C. Wood reviewed twenty-three deaths in which scopolamine and morphine had been used, and found that in at least nine of these that death must be attributed to the use of scopolamine and morphine, making a death rate of one to 215 from narcosis. Now, we will grant that, used as it is used in the *"daemmer schlaf,"* that it is very much safer than that, but the fact remains that, used in surgical anesthesia, it is the most dangerous anesthetic known. Louis Frank, in a paper read at Philadelphia last fall, makes the statement that, as near as he can find from available statistics, that there is about one death to every 3,000 administrations of chloroform, whereas there is only about one death to every 30,000 administrations of ether. He quotes from the researches of Buchanan who, after investigating statistics from many sources in regard to nitrous oxygen, arrived at the conclusion that there was about one death to every 5,250,000 administrations. I quote those statistics.

I have given many hundreds of nitrous-oxide anesthetics, and—as some one made the remark in regard to the giving of such anesthesia—I know of no anesthetic that requires the amount of skill that nitrous oxygen does, and especially if you are using whole nitrous oxygen. If you use a certain given percentage of oxygen, you will very materially lessen your danger by choosing your case, using it properly and watching your patients while you are giving the anesthetics. Nitrous oxygen is undoubtedly the safest and nicest anesthetic to give. Miller, in the paper read before the American Medical Society in 1910, in the symposium on anesthetics, states that it is very difficult to get statistics regarding death rate from the various anesthetics, but, as nearly as can be determined, the death rate from nitrous oxygen anesthetic is some place between one in 100,000 and 150,000. So the fact remains that it is very much safer than any other anesthetic. Used as we use it in obstetrics, given to the point of analgesia, where the patient is never asleep, where she hears everything said, where she is perfectly conscious and able to move when you tell her to, it is impossible for death to result during the administration of this analgesic. In the case referred to, where I administered it to an obstetrical patient for nearly eleven hours, the heart beats were watched every half hour, and during that time it did not vary over five counts, which I think is a pretty good record. The mother's pulse during the entire time did not vary ten beats.

If nitrous oxide will relieve the suffering, as we know it does, if it is as much safer as the statistics would indicate, is it not the duty of a physician who

is going to practice obstetrics, to give his patient the best that can be obtained?

Dr. Morley spoke about the obstetrical fees. Why is it that obstetrical fees are so ridiculously small? Why is it that we, every one of us, will expect to get a fee of $100 for removing an appendix, and only get $25 for delivering a baby? You worry more about the baby than you do over an appendectomy. Why not the reverse? Why not charge $100 for a confinement and $25 for an appendectomy? It is much more logical. It is safer for the average man to do an appendectomy than it is for the average man to do a simple obstetrical procedure at the home, and the only reason that people do not consider it so is that because physicians have allowed them to go on and consider a labor a physiological process. Physicians are to blame for the low obstetrical fees, and the most hopeful thing in regard to the present demand arising from women for relief from pain in child birth is that women are going to awaken to the rotten condition that is prevailing over the country in regard to obstetrics. They are going to compel us to practice better, to give them the attention that we should, the attention that we give to any other surgical procedure, and they are going to be willing to pay us for our work.

THE PRACTICAL APPLICATION OF THE SCHICK REACTION.

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The Schick reaction as brought out by Schick of Vienna, Rohmer and worked out by Park of New York has proven a reliable aid in the control of diphtheria. It is a good test of immunity and is of a great value for use in institutions such as orphan asylums and foundlings homes. It is not intended to supplant the use of prophylactic doses of antitoxin but at least its use will show antitoxin unnecessary in about 50 to 75 per cent. of cases.

From a resumé of current literature on this test the practical application seems to be as follows:

(1) By its use the number of immunizing doses of antitoxin considered necessary will be reduced.

(2) Even where bacteriological findings show Klebs-Loeffler present in the throat; as in other infectious diseases, as scarlet fever, measles, etc., a negative Schick reaction renders antitoxin unnecessary.

(3) It is of value to test from time to time the immunity of all employees in diphtheria wards, as nurses, ambulance help, maids, etc.

(4) It is of value in deciding which is a clinical case, shown by a positive reaction; and which a carrier, shown by a negative reaction with an accompanying positive culture.

(5) It is a good check of the amount of antitoxin that should be given and has shown that in bad cases the use of large doses by the intravenous route are necessary.

The test depends upon the local irritant action of diphtheria toxin when injected into the skin, in the absence of a neutralizing amount of antitoxin. This seems to be proved as follows:

In a person known to give a positive reaction (a house-physician in the diphtheria ward)—the test was performed in several places in close proximity to one another; first, in the usual manner, then in the usual manner except that diphtheria antitoxin was previously mixed with the diphtheria toxin in varying proportions in a sterile container just previous to injection.

Where the test was performed as usual a positive reaction resulted—in the others where toxin-antitoxin mixtures had been used negative results followed.

The essentials for the performance of the test are:

1. A good reliable fresh diphtheria toxin. The primary dilution should be 1-10 in carbolic acid; the diluted kept on ice will keep from one to two weeks.

2. A good sharp short patino-iridium needle and an all glass syringe graduated in tenth-centimeters, a tuberculin syringe with a colored barrel works admirably.

3. A good uniform technic of performance as follows: The skin of the flexor surface of the forearm is scrubbed thoroughly with soap and water, grasp the forearm between thumb and forefinger of left hand and with a downward pull stretch the skin tightly at the same time steadying the arm and insert needle of syringe held in right hand into the layers of the skin and thus inject 0.1 cubic centimeters of the dilution, which is so made as to equal 1/50 of the minimum lethal dose for a standard 250 gm. guinea pig. (Inject upward). A good technic is shown by the appearance of a whitened bleb which shows pittings of the hair-follicles and does not disappear on withdrawal of needle.

4. The proper observations of the test at different periods in the next twenty-four to forty-eight hours. The reactions that follow the application of this test are of two types, the true and the so-called pseudo-reactions. The pseudo-reaction is at its height in twenty-four hours and disappears rapidly.

A study of this test on normal individuals of various ages shows that 80 per cent. of the newborn, 50 to 60 per cent. of children and 90 per cent. of adults have sufficient antitoxin present in their blood to resist an ordinary exposure

to the diphtheria toxin. Von Behring has calculated that 1/30 unit and sometimes even as low as 1/100 unit of antitoxin per cubic centimeter would protect against infection.

For this paper observations have been made of Schick reactions done under various conditions but with the same toxin and the same technic. It has been used to control outbreaks of diphtheria in various institutions of the city as follows:

Report of Diphtheria situation at Florence Crittendon Home.

Report of Diphtheria outbreak at the Grace Hospital.

Report of Children's Free Hospital outbreak.

From a perusal of these reports it is seen that while results were not perfect and that in an occasional instance there subsequently developed a case of diphtheria (it was usually in a borderline case and one that may have been able to care for itself), on the other hand the test proved of inestimable benefit, it rendered unnecessary the giving of antitoxin in 50 to 75 per cent. of cases. In one instance no outbreak followed two violent exposures, and in another instance where the outbreak had gained a good start and the sources of infection numerous it stopped the spread as quickly as would the immunization of all the inmates. In another instance, namely, the outbreak in the Florence Crittendon Home during December and January, it will be seen that best results are obtained where culturing of the nose and throat, and isolation of the carriers is at the same time done to prevent repeated exposures. I have seen diphtheria develop after an immunizing dose of even 3,000 units and know that it not infrequently develops after the smaller ordinary immunizing dose of 1,000 units. With the ever present danger of anaphylaxis (which I believe is very remote) there is no doubt that much serum sickness is prevented by the application of this test. Thus the number of immunizing doses of antitoxin may be reduced from 60 to 80 per cent. with apparently as good results in the control of an outbreak.

Since March 1, 1915 we have tested all cases admitted to the scarlet fever and measles wards with this reaction. Previous to this all cases were cultured and given 3,000 units on admittance. Of 270 cases treated in this manner the cultures were positive in seventy-eight cases or 29 per cent. Even so occasionally in convalescence, diphtheria would develop and further protection with antitoxin would be necessary.

Since March 1, 1915 with the application of the Schick reaction there have been admitted 323 cases. Of these thirty-nine or 12 per cent. had clinical evidence of diphtheria and were given full doses of antitoxin. Of the remaining 284 cases thirteen or 45 per cent. gave a positive reaction to the Schick test and were protected each with 3,000 units. Of these cases which were not thought necessary to immunize because of a negative Schick reaction on admittance, in two cases it was thought necessary later to further protect, one case developed nasal diphtheria in the fifth week and another nasal case occurred on the seventh day. In both these cases the disease was of a carrier type and would probably have recovered without further protection. Another case developed diphtheria in the seventh week but a Schick reaction performed at this time proved positive. This latter instance shows that susceptibility to diphtheria toxin as expressed by the Schick reaction may vary in short periods of time. But while it had been necessary heretofore to immunize every patient admitted to the scarlet fever and measles wards and even so diphtheria would frequently follow, now only 4.5 per cent. require immunization and diphtheria is much less frequent as a complication.

That it is of value in the protection of employees exposed to diphtheria patients is shown as follows: It is a good test of suspectibility to diphtheria for nurses who are about to commence duty in diphtheria wards, or for maids, or ambulance help, house-physicians, etc. In this manner we have performed the Schick test on twenty-three nurses, of these nine or 39 per cent. showed a positive result and were immunized each with 3,000 units. Of the fourteen giving a negative reaction, three later developed diphtheria, one on the third day, one on the sixteenth day and one on the twenty-fifth day, after the performance of the test. In these three instances the attacks were mild and recoveries rapid. Of the ten cases immunized, six of whom were previously Schicked and proved positive and four of whom were not Schicked, one developed diphtheria on the third day and had to be further protected, five or 50 per cent. had serum sickness which necessitated their being off duty a total of fifteen days or an average of three days each. Thus even though in a few instances a nurse subsequently developed diphtheria after a negative Schick reaction, the attack was always mild and recovery complete. The frequency of diphtheria following the application of the Schick test is therefore very little more than following general immunization and serum sicknesses, etc., are obviously much less frequent. The work

shows that if the test were performed at shorter intervals and much more frequently, results would be much better.

As an exception we have found that in some instances a positive Schick reaction results where we have every reason to believe that susceptibility to diphtheria is not present. Some of the nurses who have been employed for some time in the diphtheria pavilion, who no doubt develop an immunity to the disease, else they would more often be attacked unless frequently immunized, which is not the case, will give repeatedly a positive Schick reaction. I often perform a Schick reaction on myself and in most instances it is positive. Park concludes from this that all who show a positive Schick reaction are not necessarily susceptible to the disease. He cites an example of one of his workers who swallowed actively toxic diphtheria germs giving a positive Schick reaction and yet did not contract the disease. Hence a negative reaction means that susceptibility to diphtheria toxin is not present but a positive reaction does not necessarily show that susceptibility is always present.

It has been repeatedly shown that carriers give a negative reaction and clinical cases a positive reaction. In institutional work where the Schick test has been used, and at the same time cultures have been taken, the cases with absolutely no clinical evidence of the disease but showing Klebbs-Loeffler bacilli present, i. e., the carriers, always gave negative Schick reactions. These cases were isolated but not further protected and did not become clinical cases. Clinical cases of diphtheria have given a positive reaction. When large doses of antitoxin are given at the same time as the Schick reaction is performed the result is usually negative but may be positive. This may be explained by the using up of all antitoxic bodies by combination with the toxins absorbed from the diphtheritic process. For this series Schick reactions were performed on seventy-two cases on admittance to the diphtheria wards. Of these seventy-two cases admittance culture was positive in thirty-six cases. Therefore of these thirty-six diphtheria cases, both clinically and bacteriologically, all given full doses of antitoxin in amounts varying from twenty to forty thousand units, the accompanying Schick reaction was positive in eight or 22 per cent. of cases.

We have endeavored to find out if possible how long an attack of diphtheria with its natural and injected antitoixn will give immunity as shown by the Schick reaction. The following is from a series of cases, most of which were severe attacks of the disease.

From this table it is observed that the severe cases even with a large amount of antitoxin soon show a lack of immunity to diphtheria toxin. Thus in the case of John Volters who received 60,000 units on and before admission, being a very severe case, there was a mildly positive Schick reaction on the thirty-first day and on the thirty-fourth day the reaction was decidedly positive. Further studies of such results are necessary before definite conclusions regarding the length of immunity conferred, can be drawn.

REPORT OF DIPHTHERIA SITUATION AT GRACE HOSPITAL.

DETROIT, MICH.

On November 23, 1915, Miss Reed, a pupil nurse from Grace Hospital, upon commencing duty at Herman Kiefer Hospital was immuniz-

Name	Type of Disease	Admittance Culture	Admitted	Amount of Antitoxin Given	Schick Dec. 4	Schick Dec. 7
Miller, Miss ..	Mod. severe	—	Nov. 20	10,000		—
Welz, Miss	Mod. severe	—	Dec. 5	20,000		—
Higgens, Mrs. Ed.	Severe	+	Nov. 8	40,000	—	
Volters, Mrs.	Severe	+	Nov. 3	40,000	—	
Ostrowski, Mary	Mod. severe	+	Dec. 2	30,000	—	
Volters, Mr. John	Very severe	+	Nov. 3	60,000	mild+	+
Mills, Mr.	Very severe	+	Dec. 2	40,000	+	
Carlton, Frank	Moderate	+	Nov. 3	20,000	—	
Shupe, Jack	Mod. severe	+	Oct. 25	20,000	—	
Williams, Miss	Immun. Nurse			3,000 4 wks. ago as prophylactic	+?	
Main, Joe	Mod. severe	+	Dec. 4	30,000		—
Jordan, Mrs.	Mod. severe	+	Nov. 23	20,000		+
Pape, Margaret	Mod. severe	+	Nov. 24	10,000		—
Fudge, Mabel			Dec. 6	25,000		—

ed with 3,000 units of antitoxin. Seven or eight hours later she developed symptoms of an acute laryngitis with serum sickness. Because of hoarseness a culture was taken and returned negative. The laryngitis was then felt to be due to her serum sickness, possibly a slight edema of larynx. In a few days she returned to duty. On December 14 she returned to Grace Hospital for lecture and while there complained of feeling ill. She was sent to her room and that evening sent by Dr. McKellar to a private room in Grace Hospital. Here, owing to a decided laryngitis she was placed in a croup tent and given steam inhalations and a culture taken. This returned positive and Dec. 16 at 4:00 p. m. she was removed to Herman Kiefer Hospital. Since she had attended class and thus exposed all other nurses it was deemed necessary to immunize all susceptible contacts. A Schick test was performed on all pupil nurses and those house doctors and maids who may have been exposed. Fifty-seven tests in all were performed of which observations twenty-four hours later revealed seven positive or 12 per cent. Two of these refused antitoxin and were isolated and cultured, kept under observation until the epidemic was over. The others were each immunized with 2,000 units of antitoxin.

On December 18, Mr. Prately, age 59 years, a patient who had entered Grace Hospital three weeks before, was removed from ward 11 (Surgical) to Herman Kiefer Hospital because of a positive culture. He had had a sore throat for a few days and "there had been some spots" on his throat a few days ago but these had disappeared.

That day a Schick reaction was performed on all remaining patients of the ward and all nurses and orderlies who had occasion to be in the ward. The ward was also declared in isolation so far as visitors, etc., were concerned. Cultures of the throats of the patients were taken. All returned negative except one which was only suspicious. This one case was placed in isolation until another culture could be taken and examined, isolation was removed.

The second culture was declared positive and this case was ordered at once removed to Herman Kiefer Hospital. Owing to other conditions existing this patient on the advice of his private physician elected to be removed to his home.

Observations of the Schick reactions on these patients at the end of twenty-four and forty-eight hours showed a positive result in only one instance or 6 per cent. This patient was immunized with 1,000 units. Of seven nurses then Schicked similar observations showed four positive or 55 per cent. Of seven orderlies 0 or 0 per cent. gave positive results.

These susceptible contacts were each immunized with 2,000 units of antitoxin.

On December 23 Mr. Donohue, who on December 19 had shown a negative reaction to the Schick test, developed symptoms of sore throat. This was twice cultured twenty-four hours apart and each time the culture returned as negative. Because of its angry appearance it was deemed best to remove this case to the Herman Kiefer Hospital. Here two cultures were returned negative. Because of negative Schick on December 19 and four negative cultures this case was thought not to be diphtheritic. Another Schick reaction was performed and as it was positive in thirty-six and forty-eight hours 7,500 units of antitoxin were given. However, by this time the throat and general symptoms were almost entirely well. This was probably a case of follicular tonsillitis, possibly in some lowering his immunity to diphtheria as expressed by the Schick reaction. It also proves that immunity to diphtheria as expressed by this reaction is changeable in very short periods of time. This case rapidly recovered.

Both original cases rapidly recovered and the first exposure, Miss Reed, obtained three negative cultures at the end of sixteen days and the case from ward 11 gave two negative cultures at the end of thirteen days. The case sent home from ward 11 gave two negative cultures in seven days.

No other cases have since developed.

Summary.—Because of two known widely separated foci of infection (the nurse and the patient from ward 11) while not being actively engaged amongst the general population of the hospital some rigid precautions were necessary to endeavor to prevent a general outbreak.

Immunization of all contacts proved susceptible by the Schick reaction was therefore decided upon and proved itself a good index of immunity to diphtheria.

Because the exposures were known it was not thought necessary to culture any except direct contacts.

REPORT OF SCHICK REACTIONS PERFORMED AT THE FLORENCE CRITTENDON HOME

March 9, 1916.

On March 7, Evelyn B., age 2 years developed sore-throat and symptoms of diphtheria, a cul-

ture taken proved positive for Klebs-Loeffler bacilli. Next day another child, age 3 years, developed clinical diphtheria corroborated by a positive culture. Neither of these children had been in the institution but four or five days so presumably one of both were exposed before entrance to the institution. Because both cases were from the first floor nursery it was deemed necessary to immunize all susceptible occupants of that ward, culture of the nose and throat also being taken.

Next day all cultures were returned negative, no carriers evidently being a source of the epidemic. Observations of the Schick reactions thirty-six hours showed a positive result in four cases or 16 per cent. These were each protected with 1000 units. No other cases have since developed.

Results of Schick test were as follows:

	Name	Age	Result
1.	Mildred	6 yrs.	—
2.	Harry	6 yrs.	—
3.	Wilbur	4 yrs.	—
4.	Harold	5 yrs.	—
5.	Dewight	4 yrs.	—
6.	Mary C.	3 yrs.	—
7.	Marjorie	4 yrs.	—
8.	Norma	3 yrs.	—
9.	Eva	3 yrs.	—
10.	Bruce	2½ yrs.	—
11.	Harvey	2 yrs.	1,000 U+
12.	Leona	5 yrs.	—
13.	Mildred B.	21 mos.	—
14.	Ginger	21 mos.	—
15.	Annabelle	3 yrs.	—
16.	Thelma	5 mos.	—
17.	Herbert	18 mos.	—
18.	Elmer	18 mos.	+ 1,000 U
19.	Martha K.	22 yrs.	+ 1,000 U
20.	Lizzie	29 yrs.	—
21.	Evelyn	20 yrs.	—
22.	Emiline	21 yrs.	—
23.	Meta	29 yrs.	—
24.	Marie N.,	23 yrs.	+ 1,000 U

REPORT OF DIPHTHERIA SITUATION AT CHILDREN'S FREE HOSPITAL.

On March 8, 1916, Mary Laverne, age 15 months and Ralph LaChance, age 7 years were seen at Children's Free Hospital, the former showing a discharging right ear and nasal discharge both of which were positive for Klebs-Loeffler bacilli and the latter showing signs of sore-throat also accompanied by a positive Klebs-Loeffler culture. Both were at once removed to the Herman Kiefer Hospital, next day the latter child developed a scarlet fever rash and was transferred to the scarlet fever ward. Both of these cases had been in the Children's Free Hospital but a short time, in fact is was the routine admittance culture 'n each case that demanded the investigation. On March 12 Joseph Balculo, age 5 years developed symptoms of diphtheria with extensive membrane on both tonsils and marked laryngeal involvement and was removed at once to the Herman Kiefer Hospital. Ten thousand units of antitoxin were then given intravenously by the jugular route and intubation was unnecessary and recovery rapid. As these latter cases (2) were both from the same ward it was deemed necessary to immunize all susceptible contacts. March 12 Schick tests were performed on all occupants of the ward; cultures of the nose and throat were also taken. Of the cultures taken the results showed a positive result in only one instant. This child showing a negative Schick was hence a carrier and treated as such upon removal to Herman Kiefer Hospital, no further antitoxin considered necessary.

Observation of the Schick reactions thirty-six hours later showed positive results in four cases or 27 per cent. These were each immunized with 1,000 units. Results were as follows:

Name	Age	Schick	Culture	
Ross Moore	9	—	—	
Vernon Severance	12	—	—	
Amelia Malevoch	4	—	—	
Harold M.	9	—	—	1,000 U.
Sam Michaelson	11	—	—	Hospital
Geo. Lozon	14	—	—	
Edward F.	10	—	—	
Ralph Sulky	7	—	—	
Annie Ochalck	3½	—	—	1,000 U.
Sam Silver	4½	—	—	
Zigmund L.	8	—	—	
Andrew F.	8	—	—	1,000 U.
Tracy G.	4	—		1,000 U.
Miss Farwell	19	—		
Miss Adams		—	—	

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SYMPTOMS AND EARLY DIAGNOSIS OF CANCER OF THE LARGE INTESTINE.*

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In order to combat malignant disease of any kind to be forewarned is to be forearmed. With a knowledge of the important symptoms which

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accompany malignant disease of the large intestine early in its onset its recognition may be accomplished in time to accomplish some good by properly directed treatment. In the past seventeen years I have had under my observation over two hundred cases of carcinoma of the large bowel involving various areas from cecum to anus. From the histories and observation of these cases many of the deductions in this paper have been drawn.

Before taking up symptoms it is well to note certain facts in connection with the incidence of malignant disease. In the first place my experience differs with the popular belief that the part played by heredity is of prime importance in the etiology of cancer of the large intestine. The majority of my cases do not give a family history of carcinoma at all and as a matter of fact more of my patients suffering from benign disease give such a history. Also comparatively few of my cancer cases give histories of previous benign disease. This will be referred to later in this paper.

In my series of cases about 65 per cent. occur in males and the majority of the cases occur in individuals below 50 years of age, the average age in men being 54, while in women it is 45. My experience has led me long since to abandon the expression. "The Cancer Age." There is no cancer age. My youngest case was 19 years of age and my oldest 87. The majority of my cases have occurred between the ages of 35 and 55. Regarding location will say that after leaving the anal canal frequently occurrences of cancer decrease in ratio to distance from the anal outlet. This statement is modified only by the fact that cancer is more prone to locate at the flexures and constrictions of the colon. Namely in ratio to the frequency: Rectum, sigmoid flexure, anus, cecum, hepatic flexure, splenic-flexure, descending colon and transverse colon.

Of all cancers occurring in the body 50 per cent. are found in the gastro-intestinal tract and 16 per cent. of these occur in the rectum which means that 70 per cent. of all cases involving the large intestine are located in the rectum and sigmoid. About one-third of these will be found in the rectal ampulla while one-tenth will be found in the anal region. The variety of growth found in the anal region is squamous-celled epithelioma, while adeno-carcinoma is the most common form in the rectum and lower sigmoid. Sarcoma is very rare in this region and is found in only about ½ per cent. of the cases. It is usually a round celled variety. The rectum as a whole is the most frequent location in the gastro-intestinal tract for cancer with the single exception of the stomach.

When one checks up the percentage of cancers located at the various constrictions of the gastro-intestinal tract he is at once struck with the marked relation which exists between carcinoma and chronic irritation, as evidenced by the marked frequency of malignant disease occurring at these points most subjected to irritation and trauma. While it has been stated above that comparatively few cases of cancer were observed in patients giving a previous history of benign disease in those cases who did give such a history the trouble was ulcerative in character.

SYMPTOMS.

Remembering that the age, sex and heredity of the patient, while important, have no definite bearing on the presence of carcinoma, one should carefully weigh all symptoms presented by the patient when endeavoring to make a diagnosis of early onset of malignant disease.

At the outset it should be stated that there are no definite pathognomonic symptoms of beginning malignant disease but there are several symptoms which should render a diagnosis reassonably certain and early enough so that treatment would be of some avail.

The earliest symptom of which a patient complains is usually a feeling of uneasiness or discomfort in the gastro-intestinal tract and he consults the physician for "indigestion." He will state that he has a feeling of bloating or fullness in the bowels usually sometime after eating and the sense of uneasiness is located by the patient according to the part of the bowel whose function is being disturbed. Sometimes accompanying this feeling of distress the patient will note a tendency to diarrhea which is noted particularly in the morning. The patient may notice some blood in the passages, the color of which will assist somewhat in locating the growth. The darker the color, the higher in the colon its source. If the growth is progressing without ulceration then no blood is noticed but an increased out-pour of mucus is observed.

Constipation may alternate with diarrhea and it is this symptom which is so often erroneously diagnosed as "colitis" and treated as such until the patient is beyond operative help. Pain is usually not present until considerably later in the disease. Occasionally pain running down the left leg simulating sciatica accompanies cancer which causes pressure on the sciatic nerve. Pain is of importance more on account of its absence than its presence. In malignant disease

in this part of the body unless obstruction has gone on to such a point that the distended bowel causes colicky pain there is practically no pain. It is only in cancer of the anus or anal canal that pain is an early symptom and then it is of such excruciating character that the patient consults his medical adviser early enough to get assistance in time to be of avail. On account of the fact that the rectum and colon is so meagerly supplied with sensory nerves pain as a warning signal often comes too late. Of course, further along in the disease emaciation, anemia and cachexia may be noted but when these symptoms appear the case has usually progressed to such a point that the hope of operative relief is reduced to a very small percentage.

DIAGNOSIS.

Four important elements in the diagnosis of carcinoma are: First, past history of the patient; second, present symptoms; third, examination by fluoroscope; fourth, proctologic examination. The early symptoms of bowel carcinoma simulate many other abdominal diseases and must be differentiated from the following: Disorders of the stomach, liver and pancreas, benign affections of the colon such as appendicitis, colitis, intestinal stasis, fecal impactions, intoxications and foreign bodies. The disease of the uterus tubes and ovaries in the female as well as the affections of the bladder and prostate in the male must also be ruled out. The presence of any of the benign rectal diseases such as hemorrhoids, fistula and fissure may often accompany malignant disease located higher up.

It has been my unfortunate experience seven times in the last two years to have cases referred to me who had been operated for hemorrhoids when the most cursory examination by the medical attendant would have disclosed a carcinoma situated in the rectal ampulla or recto-sigmoidal juncture. The disease for which carcinoma is most frequently mistaken is colitis. Patients complaining of frequent bowel movements which contain or consist largely of mucus with or without blood with accompanying loss of weight, and sallow anemic complexion are more often treated for colitis without being examined for carcinoma than any other class of patients who have had the same amount of medical attention. If the patient presenting any of the symptoms mentioned above would be subjected to a radiographic or proctologic examination, the presumptive diagnosis would be made possible. For carcinoma of the anus, rectum and sigmoid the digital and proctoscopic examination is sufficient. For carcinoma occurring higher than the sigmoidoscope will reach, abdominal palpation after administration of a bismuth meal and enema under the fluoroscope affords the best method of determining the location of a neoplasm in any part of the colon.

EXAMINATION.

The digital examination will in most cases be sufficient for the diagnosis of carcinoma of any portion of the ano-rectal canal up to the recto-sigmoidal juncture. The best position for this is the lateral or Sims position. On inserting the finger a hard mass will be found usually anteriorly or posteriorly. The hard indurated feel is different than that given by any other lesion. If the growth is progressing so that some necrosis has taken place, it will have a crater-like feel. The hard raised indurated edge and the smooth depressed center will feel not unlike the ulcerated cervix of the uterus. If the growth is of the encephloid type it will feel flabby instead of hard and indurated. Usually manipulation will start bleeding, but unless the growth is located in the anal canal there is little if any pain. On proctoscopic and sigmoidoscopic examination with the patient in the knee-shoulder position the rectum is inflated either by the pneumatic bulb or by atmospheric pressure. This will bring into view any lesions occurring within the rectum or lower sigmoid. A small ulcer granulated in appearance with or without necrotic center is suspicious enough to warrant removal of a section for microscopic examination. The area surrounding the growth is usually normal in appearance and the line of demarcation very well defined. It might be mentioned here that the inguinal glands are enlarged only if the growth occurs in perineum, anus or anal canal. The post-rectal or sacral and mesenteric glands are enlarged when the growth is in the rectum or sigmoid.

Usually a tumor of the sigmoid which cannot be located by the sigmoidoscope can be found by recto-abdominal palpation. One must not forget that the sigmoid being a movable organ, masses may be found in the left lower abdominal quadrant as well as centrally or to the right.

Carcinoma of any part of the colon above the recto-sigmoidal juncture may be located by palpation over the area of greatest distress. Then after proper preparation of the patient, the administration of a bismuth or barium meal and the injection of opaque enema fluoroscopic palpation will be of the greatest assistance in detecting the point of obstruction or constriction.

On account of the frequency of occurrence of carcinoma in the large intestine in patients of all ages it behooves every physician to subject every patient complaining of any of the symptoms mentioned above to a most careful examination in order to exclude the possibility of malignancy. If one can discover a carcinoma sufficiently early to warrant its removal by surgery so that useful years of life may be granted the patient the extra thought, time and trouble involved will be well worth while.

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RELATIONSHIP OF HEREDITY AND ENVIRONMENT ON PSYCHOSIS.*

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Ever since the history of the world heredity has been handed down as the great factor in the mental and physical development of the offspring. But today more attention is given to the breeding of lower animals. Laws are passed. A department is established in our national government which gives every possible aid to cattle breeders, how to raise and bring up good and healthy stock, but where can the poor young mother obtain any information as how to raise and bring up her baby; thanks to philantrophic societies, public lectures given by physicians and nurses to enlighten the bringing up of human beings.

Holt in his text book on Diseases of Infancy and Childhood starts out with the following:

"The physical development is essentially the product of the three factors, inheritance, surroundings, and food. The first of these it is beyond the physician's power to alter; the second is largely and the third almost entirely within his control."

While we must agree with him that inheritance is at present beyond the physician's power to alter, we however ought to do everything in our power to make it so that it can be altered in the future.

Laws have already been enacted in several states where the marriage of unfit persons by inheriting or acquiring perverted traits is prohibited and we hope to see the time when the medical man will have a great deal more to say on this subject in every state of the Union.

Some naturalists believe that the law of heredity applies only to the main characters of structure and not to details. There are two classes, one class where general peculiarites not traceable to any obvious causes are transmitted to descendants and the other class where the peculiarities bequeathed are not congenital but have resulted from changes of functions during the lives of the individuals bequeathing them. There are two modified manifestations of heredity; one, is that reappearance in offspring of traits not borne by the parents but borne by the grandparents or by remote ancestors. The other is the limitation of heredity by sex. The restriction of certain transmitted peculiarities to offsprings of the same sex as the parent possessing these peculiarities. Atavism is the name given to the recurrence of ancestral traits.

In heredity we have two factors to consider. First mentioned above, avatism, where the physical and mental organization and peculiarities may be transmitted from the first generation to the third without making their appearance in the intervening generation; thus the life and health history of the grandparents is important. Second factor is that rarely the actual diseases are transmitted by heredity. As a rule it is only a disposition to it that is transmitted.

In neurosis heredity is a very important predisposing cause. Parents pass down a general tendency to nervous diseases which is not developed into any distinct trouble unless some disturbing cause arises.

The mother transmits the neurosis more frequently than the father. In all the functional nervous affections such as hysteria, neurasthenia, mania, melancholia the influence of dissimilar heredity is very marked as they appear in families of alcoholics and syphilities and epileptics.

A neuropathic diathesis showing itself in a nervous and mental instability is not infrequently the inheritance of a condition acquired in a near generation.

A man is as much a part of his ancestry and his posterity is of him as the root and stem are parts of one tree. One can inherit a quality, one cannot inherit the absence of one. What either parent has will come to the children—to all of them, if both grandparents had it also, to half of them of like sex, if it descends from only one.

But the parent who hasn't something simply hasn't it and that is all there is to be said. His children get it from the other side or they go without it. An individual affected with evil inheritance can never hope to mend matters by marrying into a sound family.

Drunkenness is considered a heavy link in the chain of hereditary predisposing factors. Marci reports the case of a drunkard who had sixteen children, fifteen of whom died and the

*Read before the Detroit Medical Club by invitation.

only survivor became epileptic. According to Darwin, the families of drunkards die out in the fourth generation.

Marel traces the generations as follows: (1 generation) moral degravity, alcoholic excess, (2 generation), drunkenness, maniacal attacks, general paralysis, (3) hypochondria, melancholia, murder, (4) imbecility, idiocy, extinction of the family. Even children of sober parents when begotten at the time of intoxication are in a high degree disposed to insanity and nervous diseases.

Drs. Charles A. Fife and Broden S. Weeda showed before the Philadelphia Pediatric Society a case reported in *Archives of Pediatrics* September, 1911. A girl 6½ years of age, who was normal at birth and grew until 18 months old but has not grown any since. Alcoholism in the mother; the parents and other children are of normal size. Table food was began at 18 months of age. She had several attacks of diarrhea, during the second summer, also pertussis and measles. Her total length is 80½ centimeters, length of foot 11 centimeters; greatest circumference of head 44.5 centimeters. There are no signs of cretinism, rachitis or tuberculosis present.

The Intermarriage of Relatives—A few words in connection with the intermarriage of blood relations. There are two views of the marriage of blood relations—first cousins for instance; that it is objectionable in itself, and that it is so only when there is some inheritable defect in the family with which both are connected. Assuming that the same laws hold good throughout the animal kingdom recent experiments on insects would seem to indicate that the latter opinion is correct. In the insect world a generation is so short that it has been possible in a few years to observe more than seventy-five generations in succession. A task that would have required 1500 years had human beings been the subjects of investigation, says a writer in the *Revue Scientifique*. Paris, Aug. 26, 1911.

Physicians believe that consanguineous marriages cause in their offspring sterility, malformations and very often idiocy and deaf-mutism. A case is cited of a consanguine family in which of the forty-three descendants there were ten abnormal in some way, three idiots, three deaf mutes and one suicide. According to statistics of 883 such unions with 4013 children, 61 per cent. were malformed.

Some authorities believe that consanguinity is objectionable only where the partners are constitutionally diseased and when both are strong and healthy the children have the ordinary chance of being perfectly normal.

Investigations of consanguinity in animals by Mr. Moeukhus have given contradictory results. He has followed for a term of years the descendants of several couples and has shown that crossing between brother and sister may be continued for seventy-five or more generations without the least injury.

Most men and women marry persons like themselves. Pearsons devised a means of computing accurately the degree of which any two objects can resemble each other, for example father and son.

Society needs specialized types. The chances that any child will inherit parents' qualities are just doubled when these qualities in addition to appearing in the individual man and woman run also in the parents' family. This is called Daltons law. In the total inheritance of any human being each parent contributes a quarter each, of the four grandparents a sixteenth, and each of the eight grandparents a sixty-fourth etc.

Every man of science in the past has reached the conclusion that inheritance is the important matter and that invironment counts for comparatively little, according to that the good fortune of choosing a wife will swamp any error of bringing up. That is not so.

Marriage is not an individual function, but a very prominent social one which should be prohibited among imbeciles, epileptics, dipsomaniacs, syphilitics, old and mentally decayed people and lascivious men—who marry young women attracted by marriage from an economic standpoint.

Marriages especially between neuropathic persons or persons affected with organic diseases cause in their offspring psychic degeneration and morbidity.

An individual inherits from its parents and ancestors many characteristic; the tendencies, the instincts, the motivity, the intellectual force and the capacity of adaptation, special artistic and professional aptitudes, extravagances and eccentricities, tics, obsessions are all transmitted either indentically or in different form and as mentioned before these morbidities may remain latent in an entire generation and present themselves in a more aggravated way in the next.

Drunkenness and delinquency are of more degenerative significance than insanity. Drunkenness in itself is an expression of mental weakness, or in disease as dipsomania produces the greatest form of cerebropathy in the descendant

like infantile eclampsia, infantile encepalitis, idiocy, epilepsy, etc.

Alcoholic and syphilitic heredity can always be traced in epilepsy as the saying, "Alcoholism in the parent or grandparent epilepsy in the offspring." Heredity in the parent direct and similar is the principal cause of hysteria. Hysterical mother generally begets an hysterical daughter. The greatest forms of sexual perversions are certainly an expression of morbidity of the nervous system. In such cases we have almost always to deal with an inherited neuropathic and phychopathic constitution.

In reviewing Kraft Ebing work or any other authority on the subject there isn't a case without such a family history.

As one author puts it babies are alike to the precise degree as seedlings are, somewhat indistinguishable as the first two leaves unfold, but one becomes an oak, still young and vigorours after a hundred years; another blossoms and dies in one summer.

Society must protect the deficient and at the same time stand surety for them, provide asylums and schools for these individuals, to step in and advise families how to bring them up and educate them.

To education next to heredity man owes his mental character. All parents transmit to their children abnormal passions, defects of morals and eccentricities. Some in addition with a predisposition to psychopathies with feeble power of resistance to momentary impulses which tend to become fixed. They exhibit early exaggerated affectivity, emotivity, illogical, timidity, cruelty to animals and all other indications of primitive cerebral changes.

Such individuals often grow up with dreamy and fantastic natures, fond of contrasts, sensation and often finish by seeking adventures, or by failing to bring themselves to the realities of life, becoming subjects of neurasthenia or hysteria and frequently prematurely end their life.

In their infancy they are erratic, hysterical, impulsive and lacking in inhibitory control, easily receive impressions that prematurely arose and perverted sexual instincts.

Physically they suffer from headaches and frequently break down in schools.

Studies on this subject of physiological heredity have served to show how great an objection there is to accepting the view that acquired characters are transmissable.

The supposed examples of such transmissions are so rare and of so doubtful a character that eminent biologists like Valegli and Weisman have concluded that there is no such thing as epigenesis.

Instances are cited of families in which alcoholism and suicide have been frequent, but education, example, and the suggestion derived from precedent created a physical contagion that ought not to be confounded with heredity.

Dissimilar heredity of diseases, merely the effect exercised by the morbid process in the parent upon the germinal elements or upon the embryo, which is injured thereby and consequently develops with various defects. This is the way by which an alcoholic begets a depsomanic but is just as likely to promote an idiot or an epileptic.

Similar heredity of diseases in the only form in which transmissions of true organic characters can be recognized. Alienists see it in paronoia, juvenile dementia and the affective psychosis, melancholia, mania and periodic insanity.

The percentage of heredity among the insane is very high. We find clear heredity in paronoia 60 per cent., in dementia precox 90 per cent.

And truly they only inherit not a specific predisposition to melancholia, to mania or circular insanity, but merely a general predisposition to the affective psychosis and it is not improbable that the cause of such a predisposition lies in a special form of imperfect balance of metabolism, rather than in a hereditary alteration of the mental function, which would hardly answer such varied morbid forms.

The degree of instability metabolism and the disturbance of metabolism provoked by the nutrition and psychical state of the individual produce a multiplicity of reactive states—melancholia, mania or circular insanity according to the individual reactivity of the patient and the circumstances of the moment.

In these instances we have to deal with a diathesis, that has no direct relation to the intellectual mechanism and which is therefore able to modify its clinical expression within the limits indicated. According to moral heredity psychoses are communicated to the offspring always at an earlier age in each generation, and in a more severe form, and finally end by manifasting themselves at birth (congenital idiocy.) From all our study of the present knowledge as to the effect of heredity in mental diseases, it is not as supposed a law of progressive degeneration but rather a general law of psychical regeneration. It is probable that in virtue of the law, the number of the insane increases at a less rate than the total population.

Regarding the so-called degeneration stig-

mata, that is a difference of opinion. They are only signs and not causes. They mean that the disturbance has occurred in the development of the individual and some assume that the intelligence has also suffered in proportion.

I lay no stress upon the facial disturbances as ear marks, high palate etc.

Too much credit has been and still is given to heredity and too little to education and environment. But scientists are waking up all over to the effect that bad education and environment is worse than heredity in predisposing to psychosis. Criminals are almost always the products of existing social conditions, or of external influences that could in a large measure be avoided.

In the majority of criminals no degeneration of any kind is demonstrable, crime is almost always a reaction to social anomaly, injustice or prejudices. All the murders committed in this county the last two years were by young men and of good heredity. The same is true of conditions elsewhere.

Born prostitutes are very rare—the majority are made by poverty or seduction. Occupation, food, residence, family relations, customs, sexual habits are all cause of acquired psychoses Take the occupations of drivers, bar-tenders, they are all men addicted to alcohol, drug habits, etc. Almost all of the murderers in this city in the past few years have been bartenders, prostitutes, killing wifes or sweethearts.

Tanzi in his work on insanity says "among the causes of insanity the external act more widely than internal; and among the external causes somatic disorders and social irregularities are more to be feared than intellectual overstrain which has no harmful effect if it is not accompanied by hygenic, errors and depressing emotions. We must also recognize communicated insanities. They affect persons living together, that is a hysterical contagion and a paranoical and between these two extremes other conditions of insanity.

All authorities agree on two causes of insanity. The exegenous which is found by the environment and are not dependent upon the individuality of the patient. They are somatic purely psychical and social.

Of course the endogenous connected with the individual constitution and operate in any environment.

Then we have the form of insanity which depend only on external circumstances and the environment is the cause of the disease.. And the form which arises only under the impulse of an internal predisposition. Between the two we have a series of mental diseases due to mixed causes. Congenital disposition may also arise without any hereditary influence like in anomalies of skull and maldevelopment of brain. Injury or disturbances of mother during pregnancy.

While I will claim later that higher education is the only remedy to eradicate from us all forms of weakness, prejudices and make us better in losing all our animal instincts, I must also warn against higher education indiscriminately used. Very often boys and young men become criminals for one reason—because their education has given them a distaste for manual labor. Civilization by wider differences of learning has been credited with favoring insanity. Economic difficulties in struggling for existence, strong emotions, weighing upon the brain exhaust it little by little and cause a disturbance in mental function.

The defects in education that give rise to predisposition of insanity are many. (a) Too strict treatment of an extremely impressionable, emotional child who is sensitive and so much in need of loving care. (b) An education that is too solicitous which can demand nothing and excuse everything. This cultivates obstinacy, morbid passions and emotions, defective self control and inability to practice self denial. (c) Too early awakening and strain of the intellectual powers produce neuropathics and phychoses.

The old fashioned teacher suffocates the activity of her pupil. The individual taste of each child must be respected. If the child fails to respond to any lesson the teacher must not urge. She must leave her alone, in order that the brain shall remain quite clear to receive a new impression, the next time this lesson is attempted.

The taste of each class of mind must be respected, encouraged and strictly observed.

Encouragement of perfect liberty does not injure discipline among young and nervously organized human beings, if their dignity and proper independence is respected and they are led to respect themselves.

After giving the child reasonable sanitary accommodations and after having means to place him and keep him in the best physical condition, we should suggest changes in the educational curriculum.

There should be no choice between health and education; only that education is effective which is founded upon and which secures good health. The child must be taught how to live.

Overstrain of the mental and physical powers of the precocious child is dangerous.

The exorbitant demands in schools can only be satisfied at the cost of sleep and physical development. In this way a neuropathic constitution is acquired; foundation laid for insanity, as they grow up to adult life.

Over education of the unfit bring forth tastes, habits and desires of which he should not know, and is the cause of more thieving, gambling and all around dishonesty than we appreciate.

The first requisite to success in life is to be a good animal and to be a nation of good animals is the first condition to national prosperity.

The training of children should be so carried on so as not only to feed them mentally for the struggle before them but also to make them physically fit to bear its excessive wear and tear.

Out of the many elements uniting in various proportions to produce in a man's breast that complex emotion which is called love, the strongest are those produced by physical attraction. The next in order of strength are those produced by moral attractions. The weakest are those produced by intellectual attractions.

Spencer says the goodness of a society ultimately depends on the nature of its citizens and since the nature of its citizens is more modifiable by early training than by anything else, we must conclude that the welfare of the family underlies the welfare of society.

So very profound is our ignorance of the laws of life that men do not even know that their sensations are their natural guide and when they are not rendered morbid by long continued disobedience their *trust-worthy* guides.

Efforts should be made to make early education amusing and interesting.

Lessons should cease before the child shows symptoms of weariness. Education must conform to the natural processes of mental evolution.

1229 David Whitney Bldg.

REPORT OF A CASE OF "OTOGENIC PHARYNGEAL ABSCESS" WITH REVIEW OF LITERATURE.

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December 21, 1915—Mr. E. D. R., Plainwell, Mich., male, age 46, white. American; occupation, laborer. Seeks relief for pain on the left side of head. General history is negative.

Special Nasal and Throat History.—Patient has occasional attacks of rhinitis and pharyingitis. Aural history. Patient had an attack of influenza in 1910 complicated by pain, deafness and discharge from the left ear. The recovery was rapid but has always been somewhat deaf in the left ear since the illness. On Dec. 8, 1915 patient had an ordinary attack of pharyngitis which continued a day or two, followed by rhinitis. There was very little soreness on swallowing and this disappeared in twenty-four or thirty-six hours. On December 12, the left ear began to ache accompanied by severe headache over temporal occipital region. The pain and headache increased until December 15 when he felt a fullness in the left side of his throat up and back of the palate, as he expressed it. This continued for a few hours when there was a rush of foul smelling pus into the throat during the night of the fifteenth which nearly suffocated him. This relieved him of some of his earache and temporal and occipital pain but instead of pain being constant it now has become more intermittent.

Status Praesens.—Patient is fairly well nourished muscular but pale and looks ill. Countenance reveals the presence of discomfort. Ocular, anterior nasal and pharyngeal examination and transillumination of sinuses are negative. Posterior nasal and upper pharyngeal, or more accurately called the nasopharyngeal, examination reveals all tissues edematous. In the region above and backward of the eustachial orifice the tissues are swollen, very soft, edematous and tender to touch. Between the pillars in the soft palate above the tonsil where we get peri tonsillar abscess this area is normal.

Functional Test of Left Ear.—Weber radiates to left ear. Rinne is negative. Can just hear watch tick when pressed on pinna. Spontaneous nystagmus is absent. Caloric test negative. Membrane tympani is normal except for some retraction and an old scar in the posterior quadrant. Malleus is slightly hyperemic. Referred to Dr. A. W. Crane for X-ray examination. The plate demonstrated a necrotic mass of cells in above and behind the antrum and in the mastoid cortex. The cells in the cortex are not so completely necrosed as those in the attic and posterior zygomatic region.

Operation Under General Anesthesia.—Heath's conservative mastoid operation was done on December 23. Nothing important was found except that the necrosis in the mastoid cavity and antrum was very extensive forward, inward and backward and downward. Pneumatic cells were very plentiful in the tympano mastoid bone and there is little doubt in my mind but that the abscess blazed its way to the lateral pharyngeal wall through the pneumatic spaces adjacent to the eustachian tube.

Patient now hears watch at twenty-three inches and has been completely relieved of pain and headaches.

In 1906 Holmes reported a case similar to this and mentioned the fact that several otologists had remarked that they had never seen such a case.

Dan McKenzie has written that in observing many cases of suppuration of middle ear one is impressed with the occasional occurrence of the unilateral swelling of the posterior lateral pharyngeal wall, probably an adenitis which has

not progressed to abscess formation. Of course septic adenitis in this situation may be ascribed to infection from the nose or naso-pharynx but the retro pharyngeal adenitis and the middle ear suppuration may be looked upon as an independent process but arise from one cause.

Galge's researches in cancerous growths of middle ear demonstrated that there is lymphatic connection between the middle ear and the lymphatic nodes of the pharynx so that infection of the pharyngeal gland can result easily from the middle ear infection.

PATHOGENESIS.

Owing to the fact that this patient had a spontaneous rupture of the pharyngeal abscess and that the surgical relief adopted was successful I cannot demonstrate any pathological specimens. I arrived at a diagnosis from clinical data. The literature upon the subject contains but little post mortem evidence. One case reported by Williams of London has post mortem evidence to demonstrate facts.

There are four different ways in which otogenic pharyngeal abscess may be produced. First by direct extension of the purulent disease from the middle ear through the petrous bone to the pharynx, secondly by the wandering of an extra-dural abscess of the middle cranial fossa to the tip of the petrous bone and thence by the foramen lacerum anticum or otherwise to the inferior extra-cranial surface of the petrous bone; thirdly by direct extension of the purulent diseases from the pneumatic cells in the tympano-mastoid osseous structure to the under surface of the occiput and thence to the pharynx in a manner explained later; fourthly by the wandering of an extra-dural abscess of the posterior cranial fossa to the same sub-occipital region.

We can conveniently describe the various routes by grouping the first two under the heading of sub-petrous variety and the last two under the sub-occipital variety.

The key to these two regions is the rectus capitis lateralis muscle which extends from the transverse process of the atlas upward to the jugular process of the occipital bone. The surface land mark is the posterior wall of the auditory meatus. It thus stretches like a curtain across the space between the atlas and the occiput and extends laterally from the styloid process to the occiptal condyle so that it divides the region into an anterior of sub-petrous region and a posterior or sub-occipital region. The sub-petrous region contains the styloid process and its muscles, carotid sheath and structures lateral to the pharynx. The sub-occipital region contains the insertion of the deep posterior and lateral cervical muscles the posterior condylar foramen and the vertebral artery and so on.

Cheatle and Mouret have pointed out that the apex of the petrous bone which is as you know in close apposition with pharynx may contain cellular extension from the mastoid which passes between the cortex of the petrous and the upper limits of the labyrinth capsule, the supra-labyrinth cells above the internal meatus. Indeed, cells may extend inwardly from the floor of the tympanum between the labyrinth capsule and the jugular bulb, the sub-labyrinth cells to the apex of the petrous below the internal auditory meatus and in relation to the carotid canal.

Some of the writers have called the attention of the profession to the canal for the tensor tympani as a likely route by which pus may reach the pharynx. This canal is about 10 to 15 millimeters in length and is located in the roof of eustachian tube. It passes forward as far as the spine of the sphenoid and adjacent parts of the greater wing of that bone so that pus following its fibres would certainly arrive at a position in the lateral pharyngeal wall. Guillimen points out that the muscle would be more likely to obstruct than to promote the development of the disease unless its fibres were destroyed by every virulent infection. If the canal were the offending part of this disease process otogenic pharyngeal abscess would likely be more frequent because this canal is a constant structure. Knapp has reported post-mortem findings that demonstrated that pus did actually take this route to reach the pharynx.

Haug reported a case of a piece of cotton wool that had been inserted in the external auditory canal by the patient himself that had finally been recovered from an abscess in the pharynx. The cotton was either pushed through the floor of the tympanum and then migrated towards the pharynx outside the eustachian tube or it ulcerated its way through its walls.

The carotid canal is frequently surrounded by pneumatic spaces which form a good route for pus to follow from the middle ear. Some cases have been reported with such pathology.

In this connection I might mention Grunert's case in which the posterior wall of the carotid canal at the apex of the pyramid had become separated and was found lying loose in pus. The carotid canal itself was so filled with granulations that the carotid artery was compressed to a fine tube "the size of a knitting needle."

It is now a well known fact that the majority

of extra-dural abscesses develop from the roof of the tympanum. To reach the apex of the petrous bone it has to burrow downward, forward and inward between the dura and the anterior surface of the pyramid. The superior petrosal sinus would form an easy route for the pus to reach the foramen lacerum anticum but when it did arrive at such a point the dura is so firmly adherent to the edges of the foramen that it would prevent further progress of the abscess but when the abscess does find the under surface of the petrous bone it may present in the pharynx in two places; first, above the upper border of the superior constrictor within the lateral pharyngeal fascia; secondly, if it follows the downward and inward direction of the levator palati muscle which is attached to the cartilaginous portion of the eustachian tube it may point in the palati above the tonsil very much in the position of a peri-tonsillar abscess. All peri-tonsillar abscesses that occur during an acute attack of middle ear disease should be investigated as to their relationship.

Permit me to mention those cases of Hessler Kafler and others in which fistula occurs in the anterior meatus which result from an abscess in the pterygoid or pharyngeal region; or diseases of the pneumatic cells in the anterior meatal wall or defects therein the result of which is an ulceration into the external auditory canal.

The second class or the sub-occipital abscess results directly from pus gravitating from the bone cells of the mastoid or occipital bone or traversing the posterior cranial fossa usually as an extra-dural abscess. The sub-occipital region may be defined as that part of the cervical region immediately below the occiput which lies posterior to the styloid process and rectus capitas lateralis muscle; medial to the inner aspect of the mastoid process; lateral to the margin of foramen magnum and the occipital condyle and anterior to the superior curved line of the occiput.

Through the researches of Cheatle, Perez and Mouret they have shown that the cells that are concerned most in the infection of the deep cervical tissues in the sub-occipital region are those of the digastric triangle "or sinuso-digastric cells." These are located in the inner wall of the mastoid cavity midway between the vertical part of the lateral sinus and the posterior wall of the external meatus, the antrum and the mastoid apex. They should always be scrutinized for they may invade the occiput or sub-labyrinth or may lead to the jugular foramen.

We now pass to the extra-dural abscess in the posterior cranial fossa and the indirect way it enters the sub-occipital region. Some believe that these follow the jugular vein down to the jugular foramen and then find their way into the pharynx. Guillimen criticises this view from the fact that the nerves in the jugular foramen are not injured. Too, the dura is very adherent around the border of the foramen and abscesses do not rupture here as often as indicated by some writers. Guillimen suggests that the abscess emerges through the occipito-mastoid suture where it traverses the jugular foramen. This would bring it into the sub-occipital region. If an abscess did rupture through the dura at jugular foramen it would be retained within the carotic sheath which is attached to the bone around the carotic canal and foramen lacerum posticum. Peri-sinus pus can leave the skull through the occipito mastoid suture, the mastoid emissary vein higher up, the posterior condylar foramen, the foramen magnum, anterior condyloid foramen and the canal for the hyopglossal nerve. In this canal there is a venous plexus dependent upon the lateral sinus. So during the lateral sinus thrombosis if this becomes thrombosed a pharyngeal abscess may be promptly initiated. Too, the bone of the skull is very thin at either side of foramen magnum, hence this may be eroded by the liquefacient properties of the pus and break through. When an extra-dural abscess migrates from the skull through any of the avenues mentioned it becomes a sub-occipital abscess and the infection spreads to the deep cervical tissues and localizes behind the sterno mastoid or it might gravitate to the pharynx. This could not go lower than the cricoid cartilage because the fascia of the lateral pharyngeal wall unites with the esophagus just above the cricoid cartilage.

Guillimen says that if an abscess finds its way unto the sub-occipital region behind the rectus capitis lateralis, to its medial border between this and the occipital condyle where there is but one layer of fascia the erosion and neerosis produced by the poisonous products of the pus destroys the barrier and opens up an avenue to the pharynx. The route around by the styloid process is protected by the rectus capitis lateralis muscle parotid fascia and carotid sheath.

SYMPTOMATOLOGY.

History of middle ear and mastoid involvement. This may be acute or sub-acute or latent. There may be symptoms of labyrinthitis or paralysis of 3, 4, 5, 6, 7 cranial nerves. Accompanying these disturbances there may occur

increasing difficulty of swallowing, edema and swelling of lateral pharyngeal tissues. A sore throat complicating a middle ear or mastoid disease should be investigated. If abscess occurs in the pterygoid region there is edema, pain on same side of head below the zygoma. There is painful closure of the jaw because the internal pterygoid muscle aids in this function.

You will notice that the case just cited bears a close analogy to the more "latent" or "remote mastoiditis" in which an inflammation in the middle ear clears up with or without perforation of the membrana tympani, but spreads to the peripheral cells of the mastoid in which an abscess is often developed at a later period. The essential point of divergence in the two classes of cases is that, in the one, the inflammation spreads from the anterior part of the tympanum forward into the peritubal cells and so to the petrous bone, whilst in the other the infection travels backwards from the attic to antrum and thence to the mastoid. Probably the slow and insidious spread of the inflammation in both classes of case is due not only to the anatomical character of the temporal bone ("pneumatic" type) but also to the nature of the infecting organism.

DIAGNOSIS.

The combination of discharging ear or tender mastoid bone with pharyngeal abscess with temporal or facial edema, fixation of jaw or cervical cellulitis should lead one toward a correct conclusion.

Treatment Surgical.—With regard to treatment it would be necessary to open the abscess and drain it after trephining the squama above the tympanum and stripping the dura from the roof of the petrous bone. The route would be the same as for the intra-cranial operation on the Gasserian ganglion. The principal risks would lie in tearing the middle meningeal at the foramen spinosum or tearing the softened or firmly adherent dura matter and causing infection of the subarachmoid space. The difficulty lies in diagnosing the presence of an abscess, as distinct from the commoner condition, non-suppurative inflammation of the apical cells. As a rule these cases recover spontaneously. In the cases here reported the symptoms never seemed sufficiently severe to preclude the probability of spontaneous recovery so that the advisability of doing an intra-cranial operation was never considered.

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OSTEOMA OF THE FRONTAL SINUS—REPORT OF A CASE.

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WEST BRANCH, MICH.

M. H., boy, age 15, consulted me during the first week of June 1914, desiring to know what the lump was that was located just above the inner end of the right eyebrow. The only complaint was the disfigurement, there being no symptoms whatever.



Anterior horizontal view. About another time larger than tumor really is. The groove down the front is where I chiseled away a part.

He was told he had a tumor of the bone, and came to my private hospital at West Branch for his operation, on June 12, 1914.

After elevating the skin and frontalis from the line of incision along the supra-orbital margins, the periosteum was incised to form two



M. H. at 17: Showing the depression that still exists.

flaps turning away from the prominence. It was then found that a part of the outer table together with the inner end of the right supra-orbital margin had been obliterated, and that the tumor was protruding from the sinus. After sufficient of the outer table had been removed the tumor was lifted easily from the sinus; it had a broad base or pedicle attached to the inner table. Numerous depressions of the inner table were found; also an opening into the left sinus. The point of attachment on the inner table was carefully curetted, the periosteal flaps allowed to fall into the cavity, and the incision of the skin and frontalis sutured. The wound healed nicely; the patient leaving for his home at the end of a week.

The specimen was submitted to Dr. A. S. Warthin at Ann Arbor for pathological diagnosis. He reported "an osteoma eburneum, of the ivory exostosis type."

There has been no sign of recurrence in the two years that have passed since operation.

DO YOU KNOW THAT

To-day is always the best day to clean up?

Fresh air, food, rest—these three combat tuberculosis?

The U. S. Public Health Service has reduced typhoid fever 80 per cent. in some communities?

Overeating, constipation, lack of exercise, foul air, eye strain, may produce headache?

Polluted drinking water causes many deaths?

An efficient health officer is a good community investment?

Bad teeth handicap children?

Insufficient sleep endangers health?

Larkspur for Pediculosis Capitis.—Various formulas for tincture of larkspur for use against pediculosis capitis have been published, but larkspur is poisonous and harm may result where there are abrasions of the skin. Many prefer kerosene. It is applied under a suitable cap. After twenty-four hours the hair is combed to remove nits and then washed (*Jour. A.M.A.*, March 18, 1916, p. 913).

Clinical Report on Arsenobenzol.—"Arsenobenzol" is being made by the Dermatological Research Laboratories of the Philadelphia Polyclinic. It is stated to be chemically identical with salvarsan. O. S. Ormsby and J. H. Mitchell report a series of 184 injections given to seventy-five patients suffering with syphilis in its various stages. They report that the action of this drug has been uniform, its toxicity low, and its therapeutic results excellent (*Jour. A.M.A.*, March 18, 1916, p. 867).

Colloidine.—Collodine (Boracol Chemical Co., agents) is claimed to be "A Colloidal Vegetable Iodine Combination," each tablet of which is stated to represent one-third grain iodin. Because of the colloidal character of the iodin compound, colloidine is claimed to be an especially efficacious iodin preparation. The Council on Pharmacy and Chemistry reports that colloidine is ineligible for New and Nonofficial Remedies because, as shown by examination in the A.M.A. Chemical Laboratory, the iodin was deficient in amount and in a form of an iodid or in a form which so readily yields iodid that the therapeutic effects of colloidine would seem to be those of iodids; and because the therapeutic claims were unwarranted (*Jour. A.M.A.*, March 11, 916, p. 831).

Emetic Action of Drugs.—The investigation of R. A. Hatcher and C. Eggleston show that the nauseant and emetic action of many drugs is not due to their effects of the stomach, but to a central action on the "vomiting center." Practically all alkaloids and alkaloidal drugs which have emetic properties, including morphin and preparations containing it, emetin, cephaelin, quinin, nicotin, lobelin, pilocarpin, aconite and veratin, ergot and apomorphin, which produce nausea or vomiting as their chief or side actions, do so by direct effect on the vomiting center. Sodium salicylate, picrotoxin and digitalis also produce vomiting through central action. These investigations show the futility of the many devices which have been employed in attempts to avoid the nausea or emesis produced by many drugs as an undesired side-effect (*Jour. A.M.A.*, March 11, 1916, p. 817).

TRANSACTIONS

OF THE

Clinical Society of the University of Michigan

Stated Meeting, March 1, 1916

The President, UDO J. WILE, M.D., in the Chair
Reported by REUBEN PETERSON, M.D., Secretary

HISTOPATHOLOGIC STUDIES OF MULTIPLE SCLEROSIS.

(Lantern Slide Demonstration)

THEOPHIL KLINGMANN, M.D.
(From the Laboratory of the State Psychopathic Hospital)

The histopathology of multiple sclerosis has been carefully studied and described. Nevertheless the pathologic changes found in various elements of the nervous system have not been satisfactorily correlated. The material for the author's observations was obtained from the Michigan State Hospitals for the insane and was transferred to me by the director of the State Psychopathic Hospital, Dr. A. M. Barrett, to whom I am much indebted for this excellent opportunity. The clinical records of the cases, three in number, were made at the State Hospitals for the insane and which I will relate briefly as follows:

1. (309) A man of 54 years who was under observation at the Kalamazoo State Hospital for the insane for four years. The duration of the mental disorder was about nine years and the history indicates that definite neurologic signs existed for five years.

The neurologic examination is rather incomplete but it was noted that the patient had a marked tremor of the hands and almost continuous choreiform movements of the head, arms and hands. His station was unsteady with the eyes closed. The tendon reflexes were all increased and an ankle clonus was elicited on the right side. There was a marked speech defect and the patient spoke very slowly. Shortly before his death he developed bed sores.

The mental symptoms were very marked, consciousness was markedly clouded, the memory was poor and he developed delusions and hallucinations of sight and hearing. Later in the course of the disease he showed marked mental deterioration.

2. (302) A man 44 years old who was under observation at the Kalamazoo State Hospital for the insane for six weeks.

The duration of his mental disease was two years. While at the Kalamazoo State Hospital he had several paretic seizures of short duration involving the right side of the body. He complained of headache and nausea, shortly before his death, had a number of convulsions and died some hours after one of these attacks.

The patient was a very large and muscular man. He was unable to walk or stand. The left hand and arm were paralyzed. The right side of the face was immobile and the tongue deviated to the right. The speech was scanning and there was marked deafness in both ears. The sense of taste and smell was much impaired. The left forearm was rigidly held in flexion and there was marked atrophy of all the muscles of the left forearm and small muscles of the left hand. On the ulnar side of the left forearm tactile sense was lost. In the right hand there was a marked tremor occurring on volition. There was some muscular atrophy of the flexors and extensors of both legs.. All tendon reflexes were exaggerated. A Babinski toe reflex was present on both sides. The patient had incontinence of urine and feces.

Mental Examination: Consciousness was clear but the patient was disoriented for time and place. School knowledge was well retained, although the memory was defective and judgment impaired. The emotions were staple and there were no disturbances of will. The patient had auditory and visual hallucinations and delusions of persecution.

3. (412) A man 49 years old who was admitted to the Eastern Michigan Hospital for

the insane where he was under observation for three years, which marked the termination of the case.

He complained of lancinating pain in the back, joints, legs and at the exits of the sciatic nerves, and failing sight. During the first part of his illness he had an apoplectiform seizure and lost the use of his left arm and leg. He partially recovered the use of the left arm but not of the leg. He experienced several cerebral seizures consisting of coma, with consequent paralysis of the lower facial muscles of the left side. During these seizures there was an elevation of temperature varying between 102 and 103 degrees F. With each seizure the paralysis became more marked but remained localized. The reflexes, lost during the seizures, were increased at other times. There was an ankle clonus and Babinski toe reflex on the left side. In the left arm and leg there was considerable atrophy of the muscles. Light touch and pin point was more perceptible over the left side of the face, left arm and leg but otherwise there was no disturbance of cutaneous sensibility. There was a decubitus on each side of the buttocks. Three years later his right side became weak which was evident only in a general asthenia.. From the very beginning of

CLASSIFICATION ACCORDING TO LOCATION OF LESION

I. Spinal
- 1. Dorsal
- 2. Cervical
- 3. Lumbosacral
- 4. Sacral
- 5. Mixed

} Dorsal and mixed, most common.

II. Cerebral
- 1. Psychic
- 2. Hemiplegic
 - A. Form in which hemiplegia originates like apoplexy and may be residual.
 - B. More chronic cases in which hemiplegia is progressive.
- 3. Pseudobulbar—Common Type. At times hard to differentiate from cerebral arteriosclerosis.
- 4. Cortico-epileptic. Rare.
- 5. Tumor Type.
- 6. Pontine or Bulbar—With the especial forms of sclerotic encephalitis of pons and medulla.
- 7. Cerebellar.
- 8. Ocular.

III. Cerebrospinal. Classical form to which majority of cases belong.

IV. Miscellaneous According to Symptoms.
- 1. Benign form.
- 2. Rare form with remissions lasting ten years +.
- 3. Latent cases with slight clinical signs and symptoms.
- 4. Familial Form. Question whether this form occurs.
- 5. With Pain
 - A. Sclerosis multiplex dolorosa with trifacial neuralgia, etc.
 - B. Apoplectiform attacks with unilateral paresthesia and pain.
 - C. Headache.
- 6. Vasomotor. Rare.
- 7. Oculopupillary. Unilateral narrowing of pupil and palpebral fissure.
- 8. Disturbances of body temperature.

PLATE I.

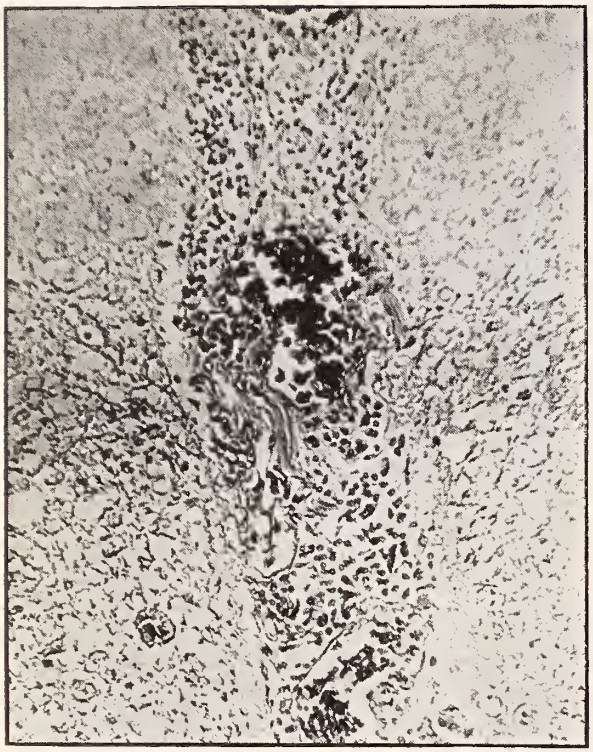


Fig. 1.



Fig. 2.



Fig. 3.



Fig. 4.

PLATE II.

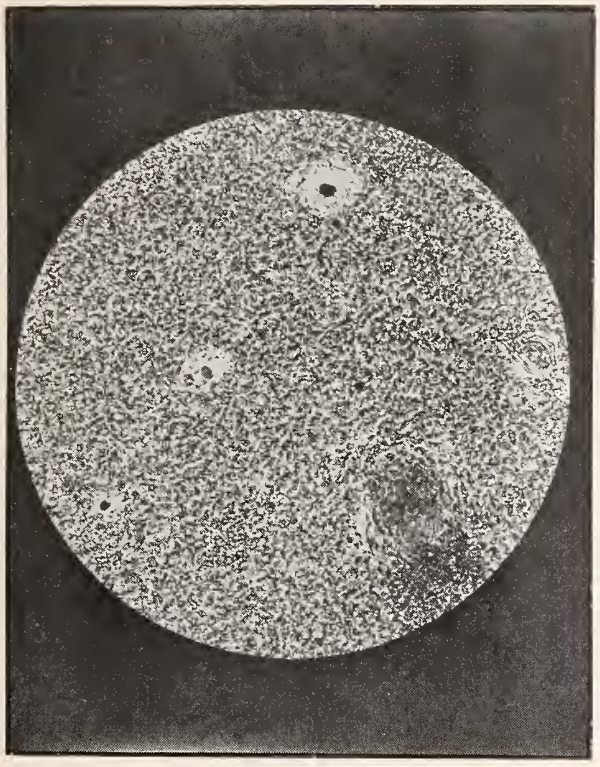


Fig. 5.



Fig. 6.

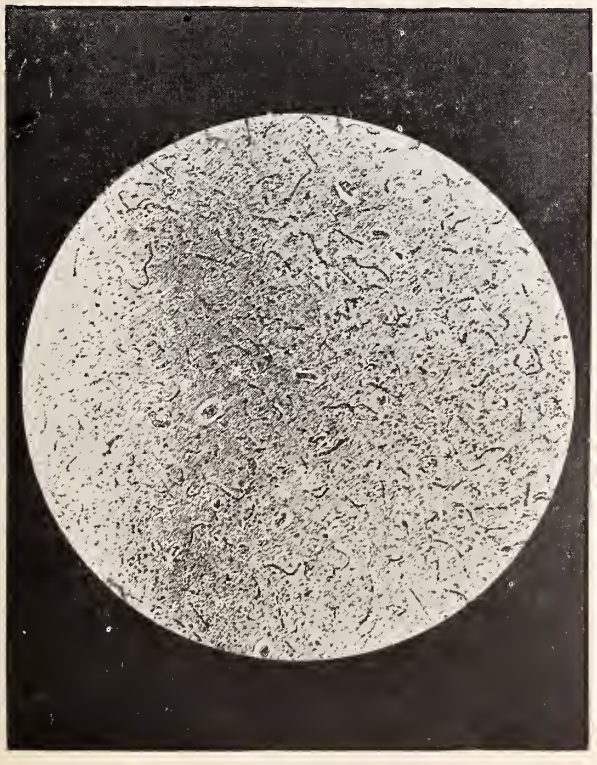


Fig. 7.

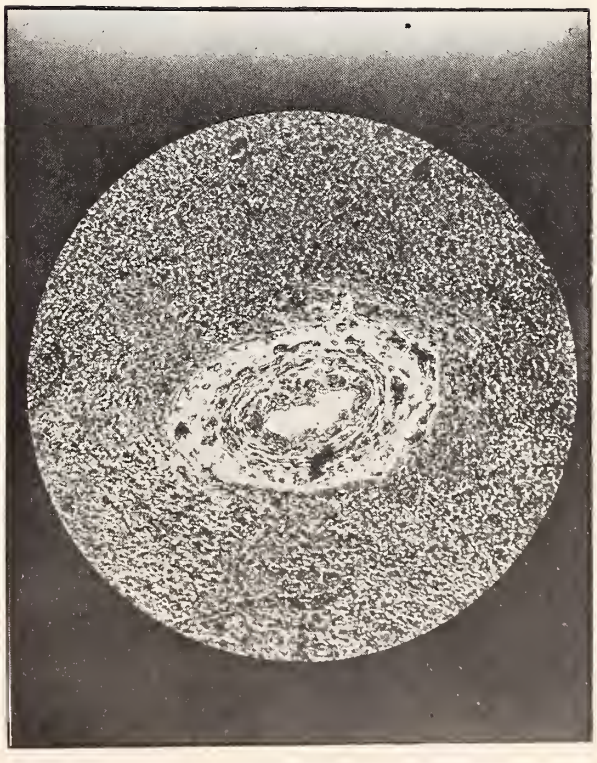


Fig. 8.

PLATE III.

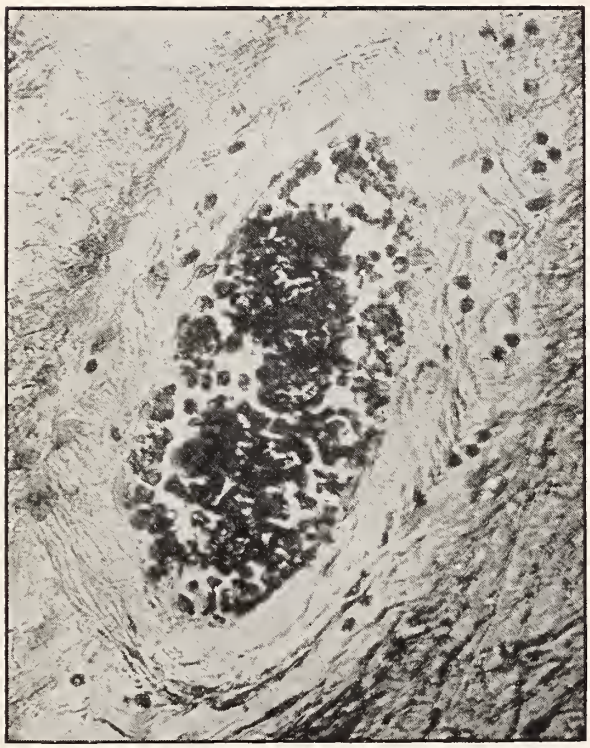


Fig. 9.

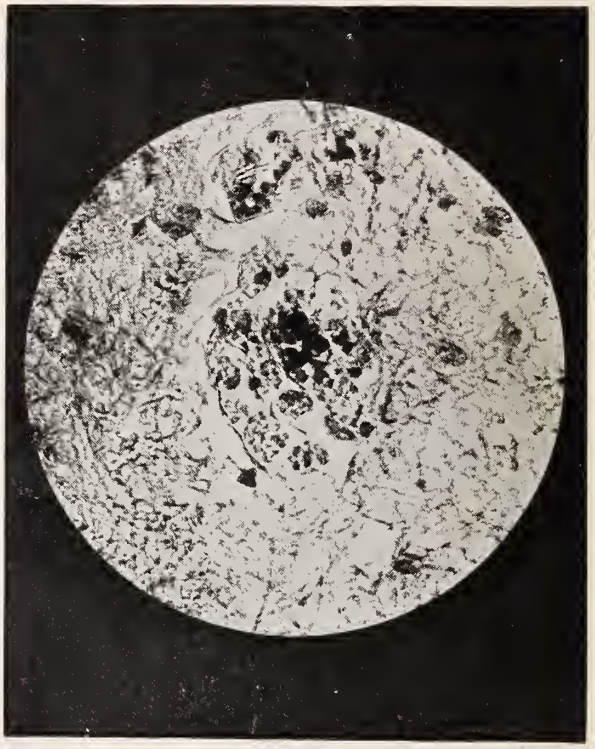


Fig. 10.



Fig. 11.



Fig. 12.

PLATE IV.

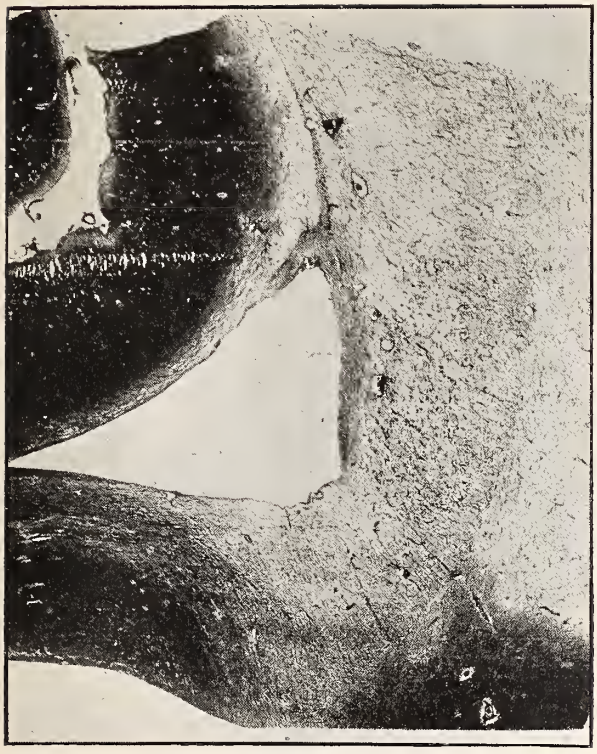


Fig. 13.

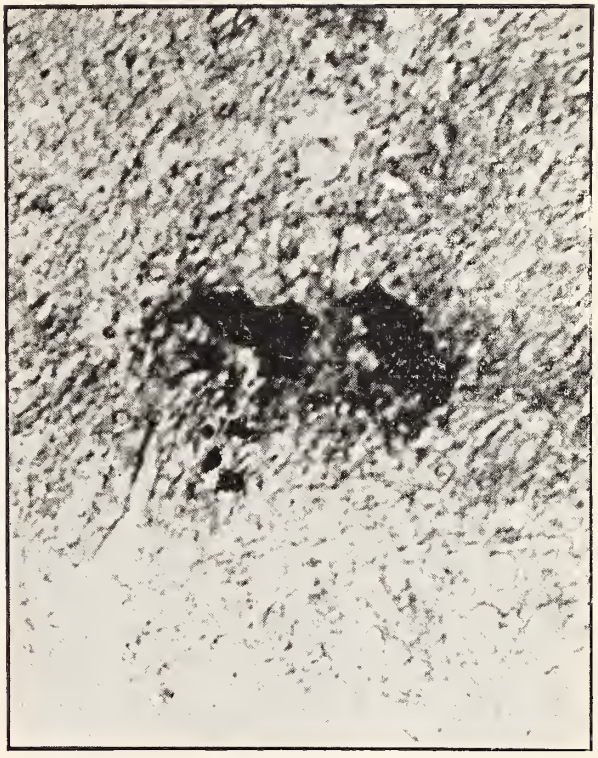


Fig. 14.



Fig. 15.



Fig. 16.

of the disease there was pronounced ataxia of the fingers of both hands, gradually extending to the arms and finally involving the legs. There was a marked intention tremor of both hands. The speech was scanning.

Mental symptoms appeared in the last year of his illness which consisted of emotional instability and marked optimism with reference to disease. The slightest provocation caused pronounced irritability, at other times involuntary outbursts of laughter. The judgment was defective and the facial expression was silly with a broad grin over the face most of the time. The ophthalmoscopic examination revealed nothing abnormal although the vision was poor. The cerebrospinal fluid was normal.

The autopsy findings were not unusual and I will therefore not review them at this time. However, it is of interest to note that in two of the cases pulmonary tuberculosis and in one, glandular tuberculosis was found at the autopsy.

For a brief review of the various forms of multiple sclerosis and the distribution of the lesions I offer the following classification:

CLASSIFICATION ACCORDING TO CLINICAL FORMS

1. Acute..
2. Subacute.
3. Chronic.
4. Remittent.
5. Chronic Progressive with remissions and exacerbations. Remissions may last ten years.

EXPLANATION OF PLATE I.

Fig. 1. A horizontal section of a blood vessel in the region of the posterior horn of the left lateral ventricle showing a marked exudate into the vessel wall and the perivascular space. The cellular elements are mostly mononuclear leucocytes. There are also red blood cells and along the center of the vessel wall may be seen numerous plasma cells. Bordering the perivascular space is a layer of rather large and irregular neuroglia cells. The surrounding tissue shows a marked neuroglia proliferation. (Van Gieson stain).

Fig. 2. An oblique cross section of a vessel in the region of the left optic radiation showing large irregular spaces between the trabeculi of the tissue of the vessel wall in which are seen a few mononuclear cells. Surrounding the vessel there is a dense felt-work of neuroglia fibers. At one side and at each end of the section of the vessel the neuroglia proliferation has obliterated the perivascular space and has invaded the vessel wall. (Phosphotungstic acid hemotoxylin stain).

Fig. 3. A section from the caudate nucleus showing a marked perivascular gliosis with but a remnant of the vessel wall remaining in the center. (Phosphotungstic acid hemotoxylin stain).

Fig. 4. A cross section of the lenticular nucleus. A silver preparation according to Bielschowsky showing a marked divestiture of neurofibrils in the region of the plaques. In the center of each plaque an occluded blood vessel is plainly seen.

EXPLANATION OF PLATE II.

Fig. 5. A section of the white substance near the subcortical margin showing a number of homogeneous plaques; in the center of each are red blood cells. At the lower margin of the section is a circumscribed area of gliosis in which the neuroglia fibers are easily differentiated and in the center of this area is a blood vessel. (Van Gieson stain).

Fig. 6. A section of the cortex showing an almost structureless area in the center of which are remnants of a degenerated blood vessel. The tissue surrounding this area consists largely of neuroglia fibers. (Van Gieson stain).

Fig. 7. A silver preparation of the cortex according to Bielschowsky's method showing a marked increase in blood vessels and strikingly few neurofibrils.

Fig. 8. A blood vessel under high magnification showing a marked granular condition of the endothelium bordering the lumen. The vessel wall contains irregular spaces in which are found cells of mesodermal and ectodermal origin. The irregular dark bodies in the vessel wall and in the perivascular space are phagocytic neuroglia cells filled with fat. (Herxheimer stain).

EXPLANATION OF PLATE III.

Fig. 9. A large vessel from the periventricular region showing a marked perivascular gliosis. The vessel is surrounded by numerous neuroglia cells. The vessel wall is impregnated and almost obliterated by neuroglia fibers. There is no perivascular space. (Phosphotungstic acid hemotoxylin stain).

Fig. 10. A blood vessel from the cortex showing phagocytic neuroglia cells in the meshes of the vessel wall. (Phosphotungstic acid hemtotoxylin stain).

Fig. 11. A cross section of the aqueduct of Sylvius, showing a granular ependymitis.

Fig. 12. A portion of the section of the aqueduct under higher magnification showing

a marked neuroglia proliferation causing irregular elevation in the lumen. (Phosphotungstic acid hemotoxylin stain).

EXPLANATION OF PLATE IV.

Fig. 13. The tissue surrounding the posterior horn of the left lateral ventricle shows numerous degenerated neurofibrils. They appear as very tortuous spirals as can be readily seen in the margin of the section. They are not unlike the spirochete found in the paretic brain; in the silver preparation as this is, they stand out much more prominent than the normal nerve fibers.

Fig. 14. Two thrombosed vessels with marked perivascular gliosis.

Fig. 15. A section from the cortex showing the formation of a plaque and the irregular arrangement of the nerve cells as well as changes in the form of the cells. (Nissl stain).

Fig. 16. A section of the cortex showing a marked divestiture surrounding a sharply circumscribed well preserved cortical area. (Bielschowsky's method).

The illustrations lead to the conclusion that there is an inflammation with a marked exudate into the vessel walls and into the perivascular spaces. A reaction in the myelin sheaths and in the neuroglia as well as the mesodermal connective tissue is very apparent.

DISCUSSION.

DR. ALBERT M. BARRETT: I am very much interested in this work of Dr. Klingmann. It seems strange that a disease so common as multiple sclerosis, one of the most common of all nervous diseases, should have so obscure a pathology. We have known for a long time the gross appearances of the lesions and the clinical symptoms, but the origin of the process still remains obscure. It has for a long time been thought that the only way one could account for the irregular distribution was by a vascular origin. Dr. Klingmann has very well shown the intimate relations which vessels bear to the distribution of these processes. Unfortunately it seems that the acute changes which one really wants to know about in these conditions seem not to have been studied, probably on account of the lack of material. One finds in most cases of multiple sclerosis all kinds of stages of a process. Most of the cases one sees rarely die in the acute stages of the disease so one has the mere clinical and secondary reactions to study. One cannot speak too highly of efforts to solve this question, because it still remains a disease which is very obscure in its pathology.

As far as the gliosis is concerned, it is a question of secondary reaction. The primary cause is to be sought in some factor, possibly toxic, distributed through the vessel spaces and lymph sinuses which disintegrates the myelin around the vessels and then one gets the neuroglia. And evidently one gets at the same time the inflammatory reactions which Dr. Klingmann has shown.

DR. CARL D. CAMP: This condition is certainly more common than is generally recognized by the profession and deserves very careful study. I have been especially interested in the way in which changes in the symptomatology can occur. When we see these cases post mortem it is difficult to realize that these sclerotic areas, so-called, cannot be permanent. When we see the cases clinically we see the symptoms, such as loss of reflexes, appear and disappear. The symptoms are so transient that it seems necessary that we think of a cause which at times acts and at other times ceases to act.

DR. UDO J. WILE: I should like to enquire about the fat cells around the blood vessels and to ask Dr. Klingmann if this change is in the nature of a fatty degeneration or whether the fat is carried there as a foreign body. There is an analogy in certain changes that one meets in general pathology where circulating lipoid is deposited in the endothelium of the blood vessels and produces changes there that react upon the connective tissue and give rise to a fibrosis, which resembles the process which Dr. Klingmann describes.

DR. KLINGMANN: I might add that all of these patients had tuberculosis. Two had pulmonary tuberculosis and the other had a glandular involvement.

In regard to the variations of the symptoms, attention has been called to the fact that there is an increased amount of lymph and we notice in sections of tissue of sclerosis that the lymph spaces are all very wide. Whether that is really due to pressure, to an edema, or whether to a certain extent they are due to artefacts, I am not in a position to say. Writers have called attention to the fact that it is possibly due to localized changes which are not permanent.

In regard to Dr. Wile's question, I may say that the fat is collected in the cells and as far as I could make out most of these cells were the scavenger neuroglia. Besides these cells there were numerous epithelial cells which did not contain fat. It seems to be rather difficult where the cells are filled with fat as these were, to tell what the nature of the cells is, but comparing these sections with other sections not treated with the Herxheimer stain, it appears that they are probably the neuroglia scavenger cells. In all probability the collection of fat comes from the breaking down of the myelin sheaths and the degeneration of the nerve fibers themselves.

Attention has been repeatedly called to the association of tuberculosis with multiple sclerosis. Many cases have shown clinically lesions of the lungs. It would be very interesting to follow this up in all the cases. The reason that we are obliged to study chronic conditions, or the terminal stage of the disease is because the patients do not die early from multiple sclerosis. Therefore it is very difficult to study the beginning of the disease, or the condition in acute stages. There are very few cases where this is possible.

SOME REMARKS AND CLINICAL REPORTS ON THE USE OF DAKIN'S SOLUTION.

C. B. G. DE NANCREDE, M.D.
AND
R. W. KRAFT, M.D.
(From the Surgical Clinic, University Hospital, Ann Arbor, Michigan)

At the request of your President, I have consented to make a few remarks concerning an alleged new remedy for infected wounds, which is claimed to produce results not much short of marvellous. Fortunately we have but few cases where, asepsis going astray, or because of the necessity of invading tissues recently the habitat of pyogenic organisms, inhibitory influences being removed from the microbes, profuse suppuration occurs. Dr. Kraft has kindly supplied me with brief notes of the few cases where we have had a chance to try this much vaunted remedy.

But first a few words must be devoted to an attempt to disentangle fact from fancy, concerning this Carrel-Dakin solution as it is most commonly termed. I say an attempt, because I am far from certain that the abstracts from which I draw my information are correct. Certainly the percentages of the hypochlorous acid, and some other ingredients markedly differ, yet I do not regard these discrepancies as of serious moment.

Hypochlorous acid is said to have been first discovered by Berthollet in 1788, but Ballard in 1834 seems to have later shown that Berthollet's fluid really consisted of sodium chloride and sodium hypochlorite. Perry by passing chlorine into crude potashes in 1792 secured a disinfecting fluid called *Eae de Javal,* because made at the Javel works near Paris, really a solution probably of impure sodium hypochlorites. The French pharmacist, Labarraque by passing chlorine through an aqueous solution of sodium carbonate, obtained a fluid containing much free alkali, hence irritating. Later, by other processes, a more stable preparation than the hypochlorites of sodium and potassium was secured and is what is probably usually termed Labarraque's solution, viz., one of calcium chloride and calcium hypochlorite. This is the preparation by means of which Semmelweiss in 1846 eradicated puerperal fever from his clinic. In addition to these brief statements, let me add that several elaborate methods have been described for preparing this Carrel-Dakin solution, but all non-essentials being neglected, such as salts of boracic acid, the active agent is from 2-3.5 per cent. of hypochlorous acid. The formula we have employed is as follows: Dissolve grams 12.5 grains chlorinated lime in 1000 cubic centimeters of water, after which 12.5 grams of acid boricum is added; then leave this standing for twenty-four hours, filter and use.

The use of Labarraque's original solution for sloughing carcinomata was taught me nearly fifty years ago, but I have only of late employed anything of this kind for recent infected wounds.

I would premise Dr. Kraft's brief notes of the few cases in which this remedy has been employed by saying that the alkalinity of true Labarraque's solution, which is decidedly irritating, is removed by the addition of the boric acid, which in itself is probably of little value. Some of the benefit in unhealthy wounds is believed by certain of the Continental surgeons to be due to the increased vascularity resulting from the mildly irritant effects of the application, and not to the germicidal effects of the hypochlorous acid. Indeed some recent reports claim that the wound fluids thus treated provide a favorable culture medium for germs.

I am reasonably satisfied that for a time nothing but good results, but believe that the granulations tend to become pale and avascular. As is to be expected, the odor is improved, and in the seriously infected sloughing wounds which as a rule follow shell wounds, I should expect exceptionally good results. It cannot be ignored, however, that free drainage, mechanical removal of hopelessly damaged tissues, and the statement that free "debridement" is commonly employed, must be given due weight in considering the results. Per contra, even the following cutting makes us sceptical concerning many statements coming from abroad through the medical press. So many conflicting statements, which are often diametrically opposed reach us, that we cannot but demand time to correct such apparently ill-founded claims as every new periodical brings.

Dr. Tuffier at a recent meeting of the *Societé de Chirurgie de Paris,* advised the systematic introduction into seton wounds of a gauze drain for irrigation and disinfection by Dakin's fluid. Dr. Broca showed, by personal statistics, that more than three-fourths of these seton wounds healed without other treatment than application of aseptic dressings at the orifices.

Continual irrigation with Dakin's fluid, therefore, has no advantage in such cases; on the contrary, it has disadvantages, for in seton wounds which contain debris of clothing, with or without bone fragments, Tuffier himself admits that irrigation with Dakin's fluid is in-

efficacious. In these cases the only course to pursue is to open up freely on the appearance of the first signs of inflammation.

I think that I have never seen under the free use of boracic acid solution, the rapidity with which the pus is diminished, with the Dakin's solution. I think we have long since found out by laboratory experiments, and clinical experience that boracic acid is practically not much better than salt solution. As to the hyper- or hypo-tonicity, I know nothing. This has never been mentioned in the accounts I have read. Some of the solutions are 3½ per cent.. some 2 per cent., and some I don't know what per cent. I must say that I think this solution has a marked effect in diminishing pus and odor. All of these reports of the wonderful effect in wounds, as I have said, were for seriously lacerated, infected wounds, with advanced mixed infections. These were freely laid open to get perfect exposure, and the scissors and knife were used to trim away hopelessly damaged tissues. The deepest portions were drained by tube in most cases, and then light packing with gauze, soaked in this solution was placed, and maintained in contact with the surfaces.

Here in the quotation of the two Parisian surgeons, note that one claims that gauze soaked with this solution, should be passed even through seton wounds, and the other says that you need only put on an aseptic dressing at the exit and entrance wounds and that three-fourths will get well equally certainly without complications, in other words, the uninfected wounds. On the other hand, as Broca shows, more harm than good follows the more radical practice really indicated only for the seriously infected ones. There can be no one method of treating every war injury.

In the few case-notes with which Dr. Kraft has supplied me, it cannot fail to be recognized that not one was a sloughing wound with large masses of devitalized tissue, and fragments of infected clothing, soft parts, or some foreign body. Therefore, the results I shall mention, in no wise prove that with the worst conditions presented, even the moderate improvements that I have secured, would have been noticed.

I am personally very skeptical as to the part played by chemicals in wound treatment, but it does seem to me from what I have personally seen of shell wounds, and because for the first twenty-five years of my practice I never saw even an operation wound heal without suppuration, I must concede that this solution has some effect. It is not irritating. I have very grave doubts whether the major part of the improvement is not due to the free exposure of the damaged surfaces required by the method of applying the remedy advised by most, which provides the freest exit for discharges and damaged tissues. Thus in infected wounds with much destruction of tissue, I again repeat that the results secured must be very largely due to the free drainage, and the ready exit for dying tissues.

None of the cases which I shall mention, were in any sense similar to those resulting from extensive shell and bullet wounds, with the worst results of marked infection. Because some benefit accrued from our treatment of these comparatively trivial injuries, there is no proof that the marked effects claimed in the worst class of cases is to any extent proved.

Case 1. C. T. age 3, explored for needle in knee by Dr. Darling.. A stitch abscess occurred at the upper angle of the wound. Temperature 102.4°, due as was shown to staphylococcus infection. Sutures were removed and the wound irrigated for seven days with Dakin's solution, no drainage. Healed at the end of ten days, the pus markedly lessening after the first treatment. Very little scar formation. Knee joint normal.

Case 2. Mr. C. D. age 37. Operated by Dr. Barss. Twelve hours following operation for inguinal hernia the temperature reached 103° and the white cell count 29,000. A large swelling formed on the second day in the flank, and on aspiration a large amount of serosanguineous fluid, showing short chain streptococci was secured. The discharge soon became purulent and very profuse. Leucocyte count 19,500. The patient was very ill. The sutures were removed and a tube introduced on the fifth day. The abscess in the flank drained through this, but a counter opening had to be made at the most dependent point on the twentieth day, when Dakin's solution was first used. The tube was out by the thirtieth day, and ten days later the patient was discharged with an entirely healed wound. This infection was a virulent one, the patient being very ill, restless and sleepless. The pus was lessened by one-half after the first irrigation with the solution, but a counter drain was inserted on the same day.

Case 3. Mrs. B. age 28. Appendix removed during an interval. Twenty-eight hours after the operation the temperature reached 102° leucocyte count was 40,000, reaching 50,000 on the third day with temperature 103°,

pulse 138. The seventh day, the temperature was 104.9°. On the twelfth day temperature was 104.9°, pulse 120. On the sixth day three stitches were removed, and the next day a tube drain was introduced, and another tube on the twelfth day. Irrigation was started on the seventh day, when the discharge immediately became slight, and in ten days after the institution of treatment, the white cell count dropped from 50,000 to 9,500. On the twenty-sixth day the patient was discharged with the wound entirely healed. Her temperature had dropped from 104.8° to 98.6° by the third day after the use of Dakin's solution. The apparent cause of the trouble was a very marked erysipellatous lymphangitis of the right mammary gland, and axillary lymph nodes which was evidently bloodborne.. The only portion of the wound which was infected was the subcutaneous fat which was very thick. It was believed also to be bloodborne infection as there was no spread of the breast infection to the abdominal incision by continuity.

CASE 4. M. G. age 19, amputation at hip joint for sarcoma of the femur for which a conservative operation had been done two months before by Dr. Darling.. Consequently, from this considerable lingering infection in the bone and soft parts of the thigh occurred, which apparently cleared up before the patient came under my care. Operating thus, in tissues previously infected, a tube drain of large size was of necessity employed, and on the eighth day, the discharge became not only free, but purulent. Irrigation through the tube, and dressings of the wound with the Dakin solution, seemed to very promptly diminish the discharge, and improved its character, but it was still markedly purulent, although steadily diminishing. On the thirty-third day after operation, the patient was sitting up in a wheel chair, and was sent home on the fifty-eighth day.

CASE 5. Mr. McA. 52 years of age, had had for years recurring suppuration of the soft parts of the thigh the results of extensive disease of the knee joint. While it seemed as if the flaps had been cut well above the old suppurating areas, within forty-eight hours he had a high temperature, pulse, and profuse suppuration. This became markedly diminished with the use of Dakin's solution, despite the fact that implication of both shoulder joints by an embolic process, and other pyemic foci caused his death. The amputation wound was practically healed, although it seemed at the outset to bid fair to remain open for many weeks.

The explanation, except in the last two cases, of the failure of asepsis, is not necessary to discuss for our present purposes. I cannot but believe that a decided benefit accrued from this treatment over and above that which we secured by mechanical conditions of the wound by efficient drainage. I cannot but think that if these had been wounds with a severe mixed infection, containing devitalized tissues such as often obtains in war wounds, the results would have been far less satisfactory than in the comparatively trivial conditions presented by the cases.

DISCUSSION.

DR. IRA D. LOREE: Dr. de Nancrède recommended my trying this solution in a case of residual abscess from seepage of urine from a kidney which we had opened. The infection readily cleared up after opening, so we haven't used the solution. Dr. de Nancrède's cases I take it are nearly all acute. I would like to know of what value this would be in chronic cases like some of the cases of appendicitis we used to have. Formerly when we had a case of appendicitis to operate here it was always suppurative. If it was a localized abscess we thought we were unusually lucky. There was usually peritonitis in the early days. Some of these wounds remained open for weeks. Dr. de Nancrède insisted that those cases had to be irrigated twice a day. We had to come over and irrigate them at night. If this is a good thing for chronic suppuration I think we have two or three cases in the Genito-urinary Clinic upon which we can try it. One man I am sure it can not harm, an old man in the 70's who came to the Hospital passing fecal matter per urethram. He had four or five calculi in the bladder which we removed hoping that this drainage might cause the fistula to close. He has a very foul bladder and the wound is suppurating and sloughing and I would like to ask Dr. de Nancrède's advice as to whether we should try some of this solution.

DR. DE NANCREDE: As you have remarked it can do him no harm.

DR. WALTER A. HOYT: I have been very interested in following out some of these cases and especially in the hip joint amputation where we had quite a discharge. The first twenty-four hour dressing was completely saturated through several thicknesses of gauze and pads and external dressings. At that time we put in a tube to drain the discharge but we had it in several days before we tried the solution. Undoubtedly there was a rapid decrease in the amount of discharge. I would say in four or five days at least half the amount, and a rather rapid decrease from then on. In this case in particular before we began using this solution the granulation tissue about the opening was very red and vascular. After using the solution for a short time the granulations seemed to stop their prolific growth and become more or less smooth and pale. It seems to me that in these cases as soon as the discharge has let up to a certain extent it is a good plan to

stop the irrigation because the granulation of tissues comes to a standstill. In all of these cases we used drainage and undoubtedly that is one of the important parts of the treatment. It is not unpleasant to the patient and is not irritating. It doesn't hurt the patient to have the wound irrigated and they don't object to it at all. It seems to me it is a good solution provided there is the proper amount of drainage established early, and I would say that it should be discontinued early rather than carry it through the whole infection.

Dr. James A. Van Zwaluwenburg: I should like to ask about the tonicity of this solution; is it hypotonic or hypertonic? It occurs to me that both boracic acid and hypochlorous acid are relatively poorly dissociated, and the solution used might be nearly isotonic.

Dr. R. U. Kraft: About a 2 per cent. solution.

Dr. Van Zwaluwenburg: That is about an isotonic solution.

A CASE OF PSEUDOHYPERTROPHIC MUSCULAR DYSTROPHY

Carl D. Camp, M.D.

(From the Clinic of Neurology, University Hospital, Ann Arbor, Michigan)

The patient was ten years old and was brought to the Hospital on account of inability to walk. The case presents some unsual features: First, there is no family history of the disease. The father and mother were both well and the Wassermann reaction was negative on the blood of each of them. The patient had no brothers or sisters living. One was killed accidentally but had shown no similar disability and there was no history of the trouble in grandparents, uncles or aunts. The patient's history was obtained from the parents. He weighed twelve pounds when born but "cried continually" for the first two years. He had no jaundice, no skin eruption and no convulsions. He walked at one and a half years and talked when one year old. His mental development appeared to be normal. He walked fairly well until six years old, but at all times his body would sway in walking and he never could run. He began to go to school but had to stop on account of the difficulty in walking. From the time he was six years old his difficulty in walking gradually increased until he reached his present condition of absolute inability to stand or walk, which was three months before he was brought to the Hospital. There was no pain at any time.

Examination of the patient showed a normal mentality for his age. He was unable to stand or walk. There was no adenopathy. The spine showed a slight lumbar lordosis. The pupils were equal, and reacted to light and in accommodation. There was no extraocular palsy. There was no paralysis of the face or tongue. There was no definite nor localized paralysis in the upper or lower extremities. There was marked weakness, however, in the movements of the shoulder and in the legs. There was marked atrophy of the shoulder girdle muscles and also of the arms but no atrophy of the forearm or hand. The thighs were small and appeared especially so in contrast with the large, hypertrophied calf muscles on both sides. The weakness in the erector spinae muscles is shown by a sitting position. The tendon reflexes in the upper extremities were present. The knee reflexes were not obtained but the Achilles jerks were present. Sensations to touch and to pinpoint were normal in all the extremities. The ocular fundi were examined by Dr. Parker and reported normal. Special note was made of certain of the so-called stigmata of hereditary syphilis. The patient has marked scaphoid scapulae; the bridge of the nose is very wide and somewhat depressed; there is a Mongoloid flap at the inner canthus on both eyes; and the superficial veins in the temporal region and in the head are very well seen. The patient has only four of his second set of teeth; these are the lower incisors and are notched. There is no atrophy of the thyroid gland. The points of special interest about the case, in addition to the negative family history, are: the advanced stage of the disease, a history of some peculiarity in gait ever since birth, and, finally, the presence of some of the stigmata, so called, of hereditary lues, although the Wassermann reactions on his blood and spinal fluid were negative.

In 1913 I published a paper on hereditary degeneration (*American Journal of the Medical Sciences*, 1913) and my conclusion in this paper was that in these cases we were dealing not with a hereditary characteristic which could be transmitted as a unit character in the Mendelian sense, but that we were dealing with some factor such as a toxin which caused degenerative changes in various tissues, sometimes in muscles, sometimes in bones, sometimes in the central nervous system.. This degenerative factor is transmitted and then causes similar degenerative changes in the offspring, and that it is a degenerative factor which is transmitted is shown by the fact that we do not get degeneration which is exactly alike but is of one kind in one parent and of another type in the child.

A CASE OF LEUKEMIA WITHOUT HYPERLEUCOCYTOSIS.

Quinter O. Gilbert, M.D.
(From the Clinic of Internal Medicine, University Hospital, Ann Arbor, Michigan)

In certain respects the present classification of leukemia is unsatisfactory. While the chronic lymphatic and chronic myelogenous types represent fairly characteristic diseases, relatively little is known of the acute forms and of those forms in which changes of a leukemic character are present in the blood forming organs, without the characteristic blood changes of leukemia. It is known that these unusual conditions can occur in the usual forms of leukemia as a result of treatment by Roentgen rays or by benzol and that they may develop spontaneously in such patients or after infections such as tuberculosis, pneumonia and syphilis. It seems likely, however, that in certain cases the leucocyte blood count remains low despite the presence of typical leukemic changes in the blood forming organs.

In most of such cases, however, the nature of the disease is still evident from the changes in the differential count of the white cells, and the diagnosis can often be made from the blood alone despite the lack of a marked increase in the number of the leucocytes. The observations on the following case are reported with the view of contributing to the knowledge of these unusual cases.

A young man, age 18, a resident of Michigan, entered the Medical Clinic on February 4, 1916. The chief complaint was weakness and pallor. The family history was unimportant. As a child the patient had had measles, chickenpox and whooping cough without complications. There was a definite history of frequent attacks of tonsillitis and quinsy. About one year ago he had an attack called mumps. He has not been well since. During March and April, 1915, there were several attacks characterized by redness and tenderness of the joints with migration from one joint to another. . These attacks usually lasted a few days only and at different times all extremities were involved. The last of these attacks was in January, 1916. He gave up work in July, 1915. At that time he had a confining illness of three weeks with fever and severe night sweats. Following this sickness he was weak and pale and has not improved since. In November, 1915, the tonsils were lanced during an acute attack. For the last two months there has been some edema of the feet and ankles. There has been no definite history of hemorrhage. The loss of weight has been about ten pounds.

Examination.—On entrance the temperature, pulse and respirations were 103-100-22.. The patient is of fair size for his age. There is the general appearance of emaciation with subcutaneous edema. There is a marked pallor of the skin and mucous membrane. The face appears bloated. There is no edema of the ankles. Pupils and movements of the eyes are normal. There is a diffuse alopecia of the scalp. Pubic and axillary hairs are rather undeveloped. The lips are dry and cracked. There is a slight pyorrhea. The tongue has a heavy brownish coat and there is a petechial rash of the hard palate and exudates over the anterior pillars, pharynx and uvula. The tonsils are much enlarged and show scars of operative trauma. The glands of the anterior and cervical triangles are definitely palpable. The left posterior auricular and the suboccipital glands are palpable. The epitrochlears and axillary glands are about the size of small peas. The thyroid is slightly enlarged. Just above the umbilicus there is a small subcutaneous nodule. The examination of the lungs is negative. The heart has an increased rate and a faint, not transmitted, systolic murmur. The abdomen is not distended although there is marked tympany throughout. The spleen is palpable three finger breadths below the rib margin. The liver is not palpable. There are a few purpuric spots on the right side of the neck and legs and evidence of fading spots elsewhere.

The X-ray examination of the chest by Dr. Van Zwaluwenburg is negative except for evidence of slight passive congestion. The stools, sputum, blood pressure and Wassermann were negative. The patient remained in the Hospital for eight days. During that time there was a constant irregular fever ranging between 90 and 104° with a corresponding acceleration of the pulse. The patient during this stay became progressively weaker. He lost eight pounds in weight and showed an increase of the fever. During the last few days there was a definite tendency to hemorrhage about the lips.

The blood showed the most marked and interesting changes.. Enumeration of the blood cells were as follows:

	R. B. C.	W. B. C.	Hemoglobin (Helliges)
2-4-16	2,140,000	9,850	33%
2-9-16	1,590,000	10,700	27%
2-12-16	1,140,000	3,600	25%

The differential count of the white blood cells was as follows:

	N. poly.	Eos. poly.	L. L.	S. L.	Tra.	L. M.	Mast	Myelocytes	Normoblasts	Megaloblasts	Deg.
2-4-16	9·2%	0	72%	8·8%	0·4%	9·2%	0·4%	2	1	4	66
2-9-16	8·6%	0·6%	69%	15·2%	0	7·0%	0·6%	1	1	0	33
2-12-16	9·5%	0	62·5%	22·5%	1·5%	4·0%	0	2	1	1	12

The marked thing about the total counts is the rapidly progressive anemia. The differential count shows an increased percentage of the lymphocytic cells and an absolute decrease in the polymorphonuclear neutrophiles and eosinophiles. The platelets were almost entirely absent from all smears. The cells classed as lymphocytes were abnormal in several respects. They were mostly large cells equal to or larger than polymorphonuclears. The nucleus occupied practically the entire cell. In fact some of the cells showed but very little of a cytoplasm border. In addition the entire cell substance showed more than the normal affinity for the basic stains. But the striking observation was the very large proportion of these cells which showed stages of fission not only of the nucleus but of the entire cell. In the division cells observed in this patient, however, the divisions were evidently amitotic in character.

Dividing cells in the peripheral blood are rare and are usually due to mitotic divisions. These occur especially in megaloblasts and myelocytes.

Normal lymphocytes usually show a definite achromatic ring around the nucleus when stained with Wright's stain. Most of the cells of this patient did not show this characteristic. Except by the comparison of the staining reactions of other stains especially the Ehrlich-Pappenheim triacid, one could not always be sure whether the small cells conformed to the usual description of normal small lymphocytes. For this reason all the cells classed as large and small lymphocytes should really be classed as one group. The mononuclear cells in this blood did not give the oxydase reaction of Schultze, neither did they show the premature granules of myeloblasts nor any transitional forms from myeloblasts to myelocytes. This is evidence that they are not of myeloid origin. The polymorphonuclear cells stained poorly. The granules were large and coarse. These cells were definitely deficient in some of the normal staining substances.

The red blood cells showed marked changes in size and shape with a very definite tendency to the microcytic types. The cells showed the usual staining reactions present in severe secondary anemias. It was difficult to recognize the few nucleated red forms when stained with Wright's stain as the cytoplasm as well as the nucleus took the basic stain and the resemblance to small lymphocytes was marked. However, with the triacid stain these cells were very distinctly differentiated by reason of the dark bluish-green nucleus and reddish blue cytoplasm while the lymphocyte nucleus is usually stained with lighter shades of green, and the cytoplasm a pale homogeneous pink.

The bleeding time as determined by Duke's method was definitely lengthened, probably on account of the marked decrease of platelets.

A gland about the size of a lima bean was removed from the occipital region by Dr. Hoyt, and Dr. Warthin's pathologic report is as follows: "Lymphocytoma, infiltrating the capsule of the gland and surrounding tissues. Either an aleukemic lymphocytoma or a lymphosarcoma of the generalized variety." Many of the gland tumor cells are not unlike the cells found in the peripheral blood except that they are smaller due in part to contraction of the fixing fluids.

A number of similar atypical cases have been reported in the literature. Since they are not well understood, a variety of names have been suggested for them such as leukemia, aleukemic leukemia and mixed leukemias and aplastic leukemia.

Many of the cells of this case might well be classed as tumor cells, because of the general type of reversion to a younger type of cell, because of an unusual cell activity as shown by the division forms and because of some evidence

of possible origin in glands having the characteristics of malignant tumors. The cell division forms may be considered as evidence of a very unusual cell activity.

At present the difficulty in this type of case is that we do not know the true pathologic nature and etiology. On the one hand they are described from the pathologic view point as true tumors, lymphoblastomata, with the lymphoblast as the parent cell. While on the other hand many of these cases, especially the acute forms in young individuals give a clinical history suggesting infections, and various organisms have been isolated from such patients.

This patient presents both sides of this disputed point. He has a clinical history of an unproved acute infection while he has evidence of a disease distinctly lymphoblastic in nature with the abnormal glands, gland cells and cells in the peripheral blood which might well be interpreted as neoplasm cells.

DISCUSSION.

Dr. Harry B. Schmidt: Dr. Gilbert has covered the ground very thoroughly. I should like to call attention to what he has already stated, that Dr. Dock has definitely shown that in cases with true lymphatic leukemia during an intercurrent infection, the cells can drop down to normal or below normal. I think we might drop the name of aleukemic leukemia and call them cases of leukemia with an intercurrent infection. When one finds an infection producing a blood picture of leukemia, one can usually tell the difference from leukemia. Dr. Cabot reported a number of cases a few years ago of white counts over a hundred thousand. Every one of these cases that showed these lymphatic variations in infections are not leukemias, and always have the small lymphocytes increased and not the large ones. Whereas in leukemia it is the large ones, or both. I saw a case of suppurative peritonitis in Dr. Peterson's clinic, with a white count of over 75,000 with an increase of myelocytes. We have had many such cases with nothing but neutrophilic myelocytes. At autopsy they always find some cause for it, such as a tumor in the bone marrow or miliary tuberculosis.

Dr. Mark Marshall: I am very much interested in the abnormal types of cells which Dr. Gilbert has just drawn showing the active division forms suggesting the tumor-like nature of the process. I think there is no doubt but that the chronic leukemias are tumor-like processes. However, the acute leukemias such as have been reported are for the most part severe infections. I cannot agree with Dr. Schmidt that one can always differentiate between an acute infection and true leukemia. There have been cases of infection reported in which 85 per cent. of the white cells were myeloblasts. The standard for the differentiation between a simple infectious leucocytosis and a leukemia as set by Hertz and other authorities does not enable one to make a correct distinction in all cases. This was first shown by Ruth in his report of a case of miliary tuberculosis presenting the blood picture of a myeloblastic leukemia.

Dr. Gilbert: There is one thing peculiar about these cases of apparent leukemia that occur with definite infections. In the ordinary type of reaction when there is an infection associated with a leukemia there is a drop in white count to about the normal number. In the case that Dr. Marshall reported and another case which we have now under study both of which had miliary tuberculosis, there is an increase in the white count up to 100,000. It may be that these cases are of two types, first those with the blood changes due to stimulation of the blood forming organs from infection without true leukemic changes, and the other type one with true leukemic changes with an abnormal reaction in cell production.

One of the interesting features of this case is the type of cell division because some years ago I was interested in studying the amitotic cell division in healthy regenerating tissue and I have been waiting a long time to find a frank pathologic case where the cells are multiplying as rapidly as they apparently are in this case. This seems to confirm some of my original observations that this kind of division occurs in very rapidly dividing cells, and may be only a modified form of the indirect or mitotic cell division.

Endorse the Council on Pharmacy and Chemistry.—The following resolution was presented at the San Francisco meeting of the A.M.A. and signed by all the members of the house of delegates in attendance: "Resolved, We, Members of the House of Delegates of the American Medical Association, believe that every effort must be made to do away with the evils which result from the exploitation of the sick for the sake of gain. Earnestly believing that the continued toleration of secret, semi-secret, unscientific or untruthfully advertised proprietary medicines is an evil that is inimical to medical progress and to the best interest of the public, we declare ourselves in sympathy with, endorse and by our best efforts will further the work which has been and is being done by the Council on Pharmacy and Chemistry of the American Medical Association in the attempt to eliminate this evil" (*Jour. A.M.A.*, March 18, 1916, p. 910).

The Requirements of the Council on Pharmacy and Chemistry.—New and Nonofficial Remedies contains the rules which govern the Council on the admission of remedies to this book. These rules merely require that the composition of a remedy be non-secret, that its uniformity be safeguarded, that no false claims be made regarding its therapeutic properties and that its use shall be at least based on a probability of therapeutic merit. A simple way of determining if a certain preparation complies with the Council's rules, is to see if it is described in New and Nonofficial Remedies (*Jour. A.M.A.*, March 18, 1916, p. 913).

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The Society does not hold itself responsible for opinions expressed in original papers, discussions, communications, or advertisements.

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June

Editorials

FIFTY-FIRST ANNUAL MEETING, HOUGHTON, AUGUST 15, 16, 17. HOTELS.

The following are the hotel accommodations that are available:

Douglas	90,	Houghton	$2.50 upwards.
Dee Hotel	25,	Houghton	$1.00 upwards.
Knauf Hotel..	10,	Houghton	$1.00 upwards.
Scott	75,	Hancock	$2.00 upwards.
Northwestern..	43,	Hancock	$1.00 upwards.
Arlington	30,	Calumet	$1.00 upwards.
Calumet	35,	Calumet	$2.00 upwards.
Central	56,	Calumet	$1.00 upwards.

The hotel accommodations will be provided by the three cities, Houghton, Hancock and Calumet. A five minute street car ride or a ten minute walk brings one in Hancock. Calumet is but twelve miles distant from Houghton with half-hourly car service. In addition the local committee has provided for a number of rooms in private homes. Members desiring such rooms may make reservations by writing to Dr. S. Levine, Secretary of the Committee on Arrangements.

The Committee also advises that the members rely to a certain extent upon Pullman Sleeping Car accommodations. The rate in Parked Pullman Cars is $1.50 per day per berth. In this connection please see the editorial on Special Train. It is urged that members who desire to go by Special Train make their reservation early.

Let this thought be foremost in every member's mind: LACK OF HOTEL OR SLEEPING ACCOMMODATIONS NEED NOT DETER YOU FROM ATTENDING THIS MEETING. Knowing the hospitality that characterizes the profession of the Upper Peninsula we are willing to guarantee that every member who attends will be amply provided for, even if the hosts have to forfeit their own beds. Do not for a moment presume that your physical wants will go unprovided.

From the information that we have and which will be imparted in our next issue we are certain that this meeting promises to reward every member that goes to Houghton. The attendance should not be less than 500. You owe it to yourself, your society and your hosts to plan now to attend this meeting and let nothing interfere with your doing so.

ARRANGEMENT COMMITTEES OF THE HOUGHTON COUNTY MEDICAL SOCIETY. FIFTY-FIRST ANNUAL MEETING, M.S.M.S.

Executive Committee.—Chairman, Dr. A. F. Fischer; S. Levine, Secretary; N. S. MacDonald, W. K. West, P. D. Bourland, P. D. MacNaughton, J. G. Turner, and G. A. Conrad.

Arrangement Committee.—Dr. N. S. MacDonald, Chairman; W. H. Dodge, W. T. S. Gregg, H. M. Joy, J. Holmes, J. R. W. Kirton, and J. D. MacKinnon.

Reception Committee.—Dr. W. K. West, Chairman; D. E. Godwin, W. H. King, G. W. Orr, W. H. Van Slyke, W. P. Scott, M. D. Roberts, J. Rhines, A. C. Roache, and A. D. Aldrich, P. H. Wilson, and R. A. Woodhull.

Entertainment Committee.—Dr. J. G. Turner, Chairman; J. Abrams, P. D. Bourland, H. D. Cornell, R. E. Edwards, G. E. Gallen, W. H. Hodges, A. LaBine, R. J. Maas, W. A. Manthei, F. E. Marshall, D. K. MacQueen, J. W. Moore, J. B. Quick, G. Rees, J. E. Scallon, D. D. Todd, and A. R. Tucker.

Finance Committee.—Dr. G. A. Conrad, Chairman; E. T. Abrams, A. I. Lawbaugh and A. B. Simonson.

Publicity Committee.—Dr. P. D. MacNaughton, Chairman, R. B. Harkness, and John MacRae.

SPECIAL TRAIN.

The Committee on Transportation after careful investigation have been unable to perfect any satisfactory boat arrangements for the Houghton meeting. Our meeting occurs at the time of heaviest boat traffic and the chartering of a vessel is not only prohibitive but impossible.

The Committee proposes, however, the arranging for a Special Train. This train, composed of standard Pullman Sleepers, to leave Detroit on Monday evening, August 14, at about 8 p. m. reaching Grand Rapids at about midnight, Mackinaw the following morning and Houghton about 3 p. m. of Tuesday the 15th. The cars are then to be parked in a suitable place and will serve as sleeping quarters during the meeting.

This plan will prove to be a most satisfactory one. It provides a delightful means of transportation and will afford suitable sleeping quarters in Houghton. Members may join the party along the route or at Grand Rapids.

To secure such a train one hundred reservations are requisite. To that end the Committee requests that members desirous of going to Houghton via Special Train, immediately write the State Secretary stating the accommodations desired. Reservations must be made before July 15. Write today to insure this means of transportation.

"WHAT IS THERE IN IT FOR ME."

How often have we not heard this question propounded: "What Is There In It For Me?"

Socially, commercially, professionally—when one undertakes to secure enlistments in the support of some worthy civic, communal or scientific movement the moving spirit is too often met with that query. Bearing as it does the ear marks of a selfish, narrow, conniving, calculating, attitude and individualism, it is all too evident in the minds of many; it is the causative factor of failure and stagnation—the effective dampener of enthusiasm and progress. "What am I going to get out of it." We have naught but pity, bordering almost on contempt, for the individual whose foremost thought is so self-centered, so morbid.

Here and there, in our journeys about, seeking to instill, instigate and awaken an individual's realization that he is in duty bound to contribute time, effort and personal activity to re-create organization enthusiasm and life, the first response that is uttered is, as a rule: "What is there in it for me?" We have been forced to the conclusion that therein lies the reason why so many County Societies lack the "pep," exhibit but mediocre talent and fail to have and enjoy a live, flourishing local medical society.

The sooner we realize that such an attitude is but a short step distant from complete oblivion, the sooner will there be witnessed a state wide re-awakening of medical enthusiasm and achievements. This is the day of organized effort, the day of co-operative force and energy. The lonely, self-centered and selfish mortal cannot hope to remain in the fore-rank of progress. Alone, with thoughts centered in self, with no other idea but personal remuneration, thoughtless insofar as his neighbor and fellow is concerned, he trails in the far rear-rank, enshrouded in the dust of the front file's accomplishments and is being blinded by the thought that alone, single handed he is causing the eyes of his community to gaze with admiration upon him. Poor, deluded, ignorant, backsliding, "has-beener" who no longer is even an "is 'er."

To be progressive, to merit confidence, to be successful, to accomplish and be accomplished, to command respect, trust, love and happiness necessity prescribes that our attitude must not be characterized by the receiving posture. Doing, giving, expending time, thought, study and energy—these must be our predominating attributes. It is not the "What am I going to get" but "What can I give" spirit that brings the royal, satisfactory reward. What can I give my society, what can I do for my society, how may I spend my energy and effort for my society—that is the investment that is imperative if one ever hopes to reap dividends. Let well-thinking people once become convinced that we are a selfish, grasping set, and the organization's worthiest claim will be defeated. Substantial reward, though sought indirectly, though but little taken in account, will ordinarily accrue to fidelity and zeal for professional work.

What are *you* going to do and give? What are you willing to expend? How much time, energy, work are *you* willing to invest? Having determined that, then become active and make your deposit with your County Society. Don't wait for a receipt but place the capital so that it will be at once available. Ere you are aware you will be collecting, without thought or worry, the accruing dividends that are guaranteed to result.

Let's forget among Michigan Doctors—"What am I going to get" and concentrate our energy

and thought on "What are we willing and ready to give." By doing so there will be promptly recorded a professional, organization and personal advancement—a new era of prosperity.

THE MORTALITY FROM CANCER.

The most complete statistical study of the above captioned subject is presented in a 826 page book that has been written by Frederick L. Hoffman, Statistician, Prudential Life Insurance Company.

The main results of the investigation may be summed up in the brief prefacing but suggestive statement: That the actual frequency of malignant disease throughout the civilized world has been ascertained to be much more of a menace to the welfare of mankind than has generally been assumed to be the case, and that on contrast to a marked decline in the general death rate, cancer remains one of the few diseases actually and persistently on the increase in practically all of the countries and large cities for which trustworthy data are obtainable.

The work is divided into nine chapters and is replete with tables and charts that graphically present the conclusive results. A large accurate bibliography is incorporated. It is impossible to review in detail the accurate results of this valuable study. We, however, do believe that it is conclusively shown that cancer is more common than has generally been assumed; that the annual mortality throughout the world is 500,000 per annum and 80,000 per annum in the United States alone; that the disease is increasing. This study is going to serve by arousing a universal interest in the problem of cancer control and a development of a public understanding of the necessity of early surgical interference in place of a blind reliance upon more or less disappointing methods of treatment by other means. As such this compilation is a most commendable one and its author merits our most hearty and appreciative approval. We are eager to see it receive the thoughtful study of every physician and surgeon.

Deaths

Dr. Harvey died in his home, Saturday, after a few weeks' illness from paralysis. He was well known in Detroit as a stomach specialist. After graduating from the Detroit College of Medicine, he specialized in a post-graduate course in Berlin, Germany. He was well loved by his patients for his sympathetic and conscientious care and the personal element which he put into his work.

Dr. Harvey was a member of Palestine lodge, F. & A. M., the Detroit Athletic Club, Detroit Boat Club, Wayne County Medical Society and the American Medical Association.

Dr. Wm. Morris, of Gagetown, died May 13th after an illness of only four days. He was a practitioner in this community for thirty-seven years and was very prominent in professional and civic affairs.

Dr. F. Townsend, Sault Ste. Marie, died April 26. He was a well known surgeon of the upper peninsula and has been honored and respected by all in his community.

He had been suffering from pneumonia for ten days and his death was a shock to every one. He was a member of F. A. C. S. and many honors had been conferred upon him during his medical career.

Dr. Albert McMichael, of Detroit, died April 28 in Grace Hospital from diphtheria. He was President of the Board of Education and had been an active physician in the city of Detroit for the past twenty years.

State News Notes

The notice of the removal of the Dextri-Maltose manufacturing plant from Jersey City to Evansville, Ind., published in one of our advertising pages, deserves more than passing attention. It furnishes evidence of the natural growth of a manufacturing enterprise which is now vacating its old factory with 18,000 square feet of floor space for a new location in the Central West and in a new plant with 300,000 square feet of floor space—sixteen times larger than the old one.

This removal from a comparatively small to a very large housing also affords striking proof that success awaits the manufacturer who produecs something the physician really wants, and markets his products in accordance with the standards set up by doctors for the sale of products they use. The first commandment for the direction of the manufacturer under these standards is: "Thou shalt not offer to both physician and public, by advertising or otherwise, anything which requires medical skill to properly use."

This commandment has been ignored by some manufacturers of infant foods, who have persistently educated the public with pseudopediatrics, thereby tending to increase infant mortality and hampering the physician in the practice of scientific, or even rational infant feeding.

But ultimate reform in the manufacture and sale of infant foods was as inevitable as the reform that has taken place in the sale of pharmaceutical products. The day of mystery and tradition in infant feeding is passing rapidly.

The recent simplification of bottle feeding, rendering it possible, without impractical complication, for the family physician to successfully adapt the diet to the individual baby, has brought about a strong con-

viction that the direction of infant feeding is distinctly the proper work of the physician.

This conviction has in turn created a demand for forms of carbohydrate foods which can be freshly prepared in exact proportions to meet clinical indications; and for their sale without directions for use, so that the physician can personally control the administration of the food.

The firm, which announces herewith its removal from the east to larger opportunities in the west, early recognized the requirement by the medical profession for a product used in infant feeding, made and sold exclusively for physicians, with no appeal, nor information to the public.

Ths firm deserves no special commendation for the course it has pursued, it being its duty to follow it. Reference to the sales of Dextri-Maltose is made simply to show that it is remunerative for manufacturers to treat the medical profession fairly.

The Forty-eighth Annual Commencement of the Detroit College of Medicine and Surgery, will be held in the Arcadia Auditorium, Woodward and Stimson Avenues, Thursday, June 8th at 8 o'clock.

The following is the program:

Invocation—Rev. Chester B. Emerson.

Commencement Address—Rev. Frederick Edwards, Dean, St. Pauls Cathedral.

Faculty Address—Doctor Frank B. Walker.

Conferring of Degrees—Mr. Sidney T. Miller, President of the Board of Trustees.

Valedictory—Ray W. Hughes of the Graduating Class.

The Graduating Class consists of forty-nine members, nearly all of whom will receive Hospital appointments or will commence the practice of medicine in connection with men who have an established practice, or opportunities similar in character. One Post-Graduate student is a candidate for the degree of Master of Public Health.

For the first time Detroit pulpits will be filled by physicians on June 11, which is to be known as "Public health" Sunday. The American Medical Association convention will be opened here at that time with a probable attendance of 15,000 people, 8,000 of whom will be doctors and surgeons. The speakers who will occupy the pulpits will be of national reputation and each an authority in his special line. Preventive medicine and public health will be the basis of all the addresses.

The convention will close June 16, with a public health parade and a mass meeting in the Lyceum theater, at which such noted doctors as Surgeon-Gen. Blue of the U. S. army; Surgeon-Gen. Gorgas, of the Panama canal; Dr. W. J. Mayo, of Minnesota, and Dr. Herman Biggs, health commissioner of New York state, will speak.

In a meeting of the board of trustees of the Michigan State Tuberculosis sanitorium, at Howell, and the Central Michigan Tuberculosis sanitorium, in Midland county, of which Dr. Henry J. Hartz, is President, held in Detroit, Thursday, announcement was made of the purchase of forty acres of land near Sanford, in Midland county, adjacent to ten acres contributed to the sanitorium by the county. Dr. Eugene B. Pierce, superintendent of the sanitorium in Howell, stated that a cottage for boy patients would be opened June 1.

About 100 members of the senior class attended the customary final dinner of the Detroit College of Medicine and Surgery in the Hotel Statler. Addresses were given by Dr. F. B. Walker, Dr. F. W. Robbins, Dr. J. B. Kennedy, Dr. Charles G. Jennings and R. G. Tuck, who gave the class history. Dr. Guy L. Kiefer presided.

Dr. A. W. Hewlett, Professor of Internal Medicine, Ann Arbor, has resigned to become Professor of Internal Medicine and Neurology at the Leland Stanford University next fall.

Dr. O. L. LeSeure of Detroit was elected President and Dr. F. C. Warnshuis of Grand Rapids was elected a member of the Executive Committee of the American Association of Railway Chief Surgeons.

The second annual meeting of the Interstate Association of Anesthetists will be held in Louisville, Ky., July 25, 26, 27.

Dr. Nathan Jenks, well-known Detroit physician, with offices at 541 David Whitney building, is seriously ill in Harper hospital.

Dr. F. W. Robbins of Detroit was elected President of the American Urological Association at its annual meeting in April.

If you are wondering why not more news from County Societies, the reason is because a neglect to send in news exists.

The Semi-Annual meeting of the Local Surgeons of the Pere Marquette Railroad Company was held in Grand Rapids May 24.

Dr. R. O. Knapp formerly of Ionia has located at Alden.

Dr. J. V. Frazier of Port Huron has enlisted in the Medical Department of the 213th Canadian Battalion.

Dr. C. M. Williams is pursuing post graduate work at Johns Hopkins. He will return to Alpena about August 1.

Dr. F. J. Welsh of Kalamazoo has been elected President of the local Board of Health.

Dr. Erwin Eveleth and Miss Augusta Wegner of Detroit were married May 7.

Dr. B. H. Alton has located in Saginaw and is associated with Dr. R. O. Fuerbringer.

Dr. Geraldine C. Snow of Ypsilanti has been chosen medical inspector of the Normal School.

Twenty nurses were graduated by the University Hopital, Ann Arbor on May 5th.

Miss Amanda Jones has resigned as Superintendent of the Stearns Hospital, Ludington.

The entire Senior Class of the University have secured interneships in various hospitals.

Dr. R. D. Sleight and Dr. Wilfrid Haughey of Battle Creek have perfected a partnership.

County Society News

LAPEER COUNTY

The regular meeting of the Lapeer County Medical Society was held at the Burleigh Hospital in Almont on Tuesday, May 9, 1916.

The Tri County Society was invited to be present with us and many of their members were present which made a very enjoyable meeting.

Dr. J. H. Carstens of Detroit gave a very interesting talk on Arterio Sclerosis and Diet and Dr. Hitchcock of Detroit read a very instructive paper on Syphilis of the Nervous System.

Dr. W. J. Kay's paper on "The Tuberculosis Patient" made a fine subject for discussion and sure hit the nail on the head for many practical facts regarding the etiology of that disease.

Dinner was served at the Hospital to those who were present at that time and then a nice refreshment was also served during an intermission later on in the afternoon. Great credit is due to the Drs. J. H. and D. H. Burleigh for their earnest endeavor in placing such a modern Hospital at the disposal of the surrounding community.

The next meeting is to be held at Imlay City on June 6 instead of June 13 as the latter date will interfere with Clinic Week.

Many good papers are being arranged for that date and a good attendance is desired.

J. H. Douglas, Secretary.

MUSKEGON-OCEANA COUNTIES

On January 21, Dr. A. M. Campbell of Grand Rapids read a paper and illustrated with stereopticon slides "Surgery of the Knee Joint."

Drs. Chapman and Cooper secured Dr. A. E. Halstead of Chicago for the regular meeting of March 3rd. The subject of this very interesting paper was "Clinical Significance of Intra-Cranial Pressure." This meeting was held at Hotel Hentschel and a banquet followed.

On March 31 the Society enjoyed a banquet in the spacious and elegant new dining room for nurses at Hackley Hospital and Dr. F. C. Warnshuis of Grand Rapids presented his very instructive subject of "One Thousand Consecutive Cases of Industrial work at Hackley Hospital.

The next meeting was held at the usual place, Hackley Public Library, and Dr. Cramer discussed and presented a number of plates of his own X-ray Accidents." This was followed by a general discussion.

The year's program is arranged in alphabethical order and meetings are held every two weeks. At the last meeting Dr. Eames invited the society to visit her newly equipped pathological laboratory in the Landreth block where she demonstrated the method of the Wassermann reaction. Dr. Eastman spoke of the practical application of the Wassermann test and a light lunch followed.

C. J. Bloom, Secretary.

WAYNE COUNTY

Our library committee seems to be "on the job" all the time. They are certainly to be congratulated on their efforts and successes.

Subscriptions have been received as follows:

A Friend	$ 700
Dr. H. N. Torrey	100
Dr. F. J. Sladen	50
Mrs. Louise Burt	25
A Friend	700
Mr. Robert Oakman	500
Dr. Adlington Newman	100
The Committee	80
Mr. Frank Leland	100
Total	$2,355

There are several other extremely good prospects in view and the committee confidently expect to have $3,500 in the course of the next week. Eventually they hope to have $50,000 and to make our library one of the big medical libraries of the entire country.

The regular annual election was held Monday, May 15, in the Medical Club reception room. In all 159 ballots were cast with the following results:

Dr. J. A. McMillan was elected President, receiving a majority of the ballots, 81 votes being to his credit with 49 to the credit of Dr. Geo. E. McKean and 29 for Dr. Harold Wilson.

For Vice-President Dr. C. D. Brooks received 103 and Dr. B. R. Shurly 52.

For Secretary Dr. Henry R. Carstens polled 112 while Dr. H. K. Shawan received 47.

For Trustee Dr. Angus McLean was elected with 105 ballots; 54 were case for Dr. R. E. Mercer.

Book Reviews

A TEXT-BOOK OF FRACTURE AND DISLOCATIONS, WITH SPECIAL REFERENCE TO THEIR PATHOLOGY, DIAGNOSIS AND TREATMENT. By Kellogg Speed, S.B., M.D., F.A.C.S., Associate in Surgery, Northwestern University Medical School; Associate Surgeon, Mercy Hospital; Attending Surgeon, Cook County and Provident Hospitals, Chicago, Ill. Octavo, 888 pages, with 656 engravings. Cloth, $6.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1916.

Every form of fracture and dislocation is dealt with most fully in this work, which, because of its completeness and its accurate illustrations, is destined to fill a place of accepted authority in the literature. Unique and important features of the work are the author's method in discussing fractures and dislocations, which are considered together under their several anatomical divisions, and the

special reference and emphasis which are given by the author to pathology, diagnosis and treatment.

A clear conception of osseous injuries and their repair is essential to an understanding of fractures. For this reason the author has selected examples of different types of usual fracture pathology and endeavored to bring them before the reader's eye by means of line drawings, which illustrate the essential points. Every illustration of this character is a careful reproduction of a tracing made from a Roentgenogram of an actual case, for the most part taken from the author's own practice. Much of the clinical and all of the statistical material of this book was obtained at the Cook County Hospital, Chicago.

Physicians called upon to treat cases of fracture or dislocation will find Dr. Speed's book an invaluable aid and guide, for the author's exceptional experience and acknowledged authority give proof of the wisdom and advisability of the measures he advocates.

A MANUAL OF GYNECOLOGY AND PELVIC SURGERY. By Roland E. Skeel, A.M., M.S., M.D., Clinical Professor of Gynecology, Western Reserve University. Two hundred eighty-nine illustrations, 680 pages. Cloth, Price $3.00. P. Blakeston's Son & Co., Philadelphia.

This is a manual that furnishes a working knowledge of gynecology with emphasis upon diagnosis and treatment. It should serve, as its title implies, as a satisfactory manual to the student desirous of preparing himself for greater and more extensive reading and research in this particular field. Likewise it will be of inestimable service to the busy practitioner. It contains a large amount of well selected information.

THE CLINICS OF JOHN B. MURPHY, M.D., at Mercy Hospital, Chicago. Volume V Number II (April, 1916). Octavo of 176 pages, 32 illustrations. Philadelphia and London: W. B. Saunders Company, 1916. Published Bi-Monthly. Price per year: Paper, $8.00. Cloth, $12.00.

A MANUAL OF PRACTICAL NURSING, edited by Helen L. Bridge, B.S.R.N. Asst. Superintendent of Nurses, Washington University Training School. 83 pages cloth, C. V. Mosby Company, St. Louis.

Received and pronounced as a valuable manual for nurses.

ELEMENTARY BACTERIOLOGY AND PROTOZO-OLOGY FOR THE USE OF NURSES. Herbert Fox, M.D. Second Edition, Revised, Enlarged. 251 pages, 68 engravings, 5 colored plates. Lea & Febiger.

Miscellany

One swallow doesn't make a summer; and one test doesn't constitute a guarantee of satisfaction. There are always a number of aspects to every article of utility, and although it may measure splendidly up to one of these respects, if it fails in all the rest it cannot be said to be a very efficient article. "Best by every test" is the measure of efficiency. That is the measure by which Calumet Baking Powder excels. Chemically, physically, physiologically, and domestically, it fulfills all the demands of modern science and art. It is chemically correct, physically pure, physiologically wholesome, and domestically efficient and dependable. If you can think of any other quality that ought to characterize a first class baking powder, no doubt the manufacturers will see to that, too. Personally, we can't. It looks to us as if a baking powder that can make good on those four claims is about as nearly perfect as a baking powder can be. However, you know the old proverb—"the proof of the pudding is in the eating of it." Calumet will stand that test, too.

Alarming Symptoms Caused by Diarsenol.—Diarsenol is made by the Synthetic Drug Company of Toronto, Canada. It is stated to be chemically identical with salvarsan. A. H. Cook, Hot Springs, Ark. reports that he has administered fourteen intravenous injection of diarsenol. Eleven consecutive doses were without untoward effect or phenomena differing from those attending the intravenous administration of salvarsan. The three subsequent doses produced alarming symptoms, which Dr. Cook never observed from the use of salvarsan or neosalvarsan (*Jour. A.M.A.*, March 18, 1916, p. 865).

Venarsen, Venomer and Venodine.—The A.M.A. Chemical Laboratory found Venarsen, which is recommended by the manufacturers, the Intravenous Products Company, for the treatment of syphilis, tuberculosis, pellegra and other diseases, to be "a simple solution containing approximately nine grains of sodium cacodylate, 1/40 grain of mercury 'viniodide' and ¾ grain of sodium iodid to each full dose." Sodium cacodylate is inferior to salvarsan or neosalvarsan in the treatment of syphilis. The Council on Pharmacy and Chemistry held the claims made for Venarsen unwarranted and its intravenous injection uncalled for. Venomer, which is also offered as an antisyphilitic remedy, appears to be a variation on Venarsen, containing considerable less sodium cacodylate and considerably more mercury and iodids. It prompts the comment that a careful physician would not give arsenic and mercury in fixed proportions. Venodine was rejected by the Council on Pharmacy and Chemistry because the claims made for it were found unwarranted and its composition unscientific. The indiscriminate use of intravenous products is objectionable for many reasons: It incurs an unnecessary danger, and it puts the physician to needless trouble and the patient to unnecessary expense (*Jour. A.M.A.*, March 25, 1916, p. 978).

DO YOU KNOW THAT

Light promotes cleanliness?

A clean mouth is essential to good health?

Physical training in childhood is the foundation of adult health?

The U. S. Public Health Service issues publications on hygiene and sanitation for free distribution?

Isolation is the most efficient means of controlling leprosy?

Headache is Nature's warning that the human machine is running badly?

Bullets may kill thousands—flies tens of thousands?

Obesity menaces longevity?

The Journal
OF THE
Michigan State Medical Society
ISSUED MONTHLY UNDER THE DIRECTION OF THE COUNCIL

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STATE OF MICHIGAN

EXECUTIVE OFFICE

LANSING

TUBERCULOSIS PROCLAMATION

The Nineteen Fifteen Michigan Legislature voted one hundred thousand dollars for an anti-tuberculosis campaign. Under the direction of the State Board of Health magnificent progress has been made in securing the best possible results. Michigan physicians, professional nurses, public school teachers, social workers and civic organizations, have cheerfully responded to Michigan's call for health "preparedness." Thousands who supposed they were not afflicted with this dread disease, have in free clinics discovered their imminent danger in time to conquer this arch enemy. The predisposed have been taught the laws of health, and all of the people who believe in "safety first" have learned the tremendous value of air and sunshine. In many of our Michigan cities open-air schools have been established and through these schools thousands of homes have been encouraged to a greater love for God's great out of door sanitarium.

Again I make a patriotic appeal to all the physicians of Michigan. I suggest that on Thursday, August tenth, any person in Michigan desiring a medical examination whereby he may ascertain whether he has any of the symptoms of tuberculosis, may have such examination and advice by asking a physician for it.

Therefore, I, WOODBRIDGE N. FERRIS, Governor of the State of Michigan, do hereby designate Thursday, August tenth, A. D. 1916, as Tuberculosis Day, at which time all physicians engaged in the practice of medicine are requested to render this service without charge.

Given under my hand and the Great Seal of the State, this eighth day of June in the year of our Lord one thousand nine hundred sixteen, and of the Commonwealth the eightieth.

(GREAT SEAL)

WOODBRIDGE N. FERRIS
Governor

By the Governor:

COLEMAN C. VAUGHAN
Secretary of State

Original Articles

TOXEMIAS IN PREGNANCY.

Francis C. Goldsborough, M.D., F.A.C.S.
BUFFALO, N. Y.
Professor of Obstetrics, University of Buffalo.

It is not my intention today to attempt to deal with the whole subject of the toxemias that occur in the latter months of pregnancy, but particularly to discuss the importance of attempting a differentiation, both clinical and pathological, between eclampsia and nephritic toxemia. By eclampsia, meaning to include the pre-eclamptic toxemia, or, as it is more often call, *the* toxemia of pregnancy, as well as its more advanced stage, and by nephritic toxemia, embracing both the early stages, and the later ones, where we have uremia with convulsions and coma.

I realize that there are many writers, especially among the French, and Ewing and others in this country, who hold that all of the various toxic disturbances that occur during pregnancy are simply stages or graduations of a single process. But, on the other hand, there are many, especially among the German writers, and Williams and others in this country, who attempt to differentiate these various conditions into certain well-defined groups.

This whole subject is such a difficult one and one about which we really know so little, that it seems to me the more we can subdivide it the nearer we are to a solution.

The time may come when we will find that there is *one* toxin that causes all of these conditions, or we may discover a separate toxin for each of them. *But,* until that time arrives, it will be better to divide them up into as many groups as possible, as this will encourage a more careful study of each case, and give us a better understanding of this subject.

There is a valuable practical point in attempting a differentiation between the eclamptic and the uremic toxemias, because of our better ability to give a correct prognosis for a future pregnancy, this naturally being the patient's chief anxiety, and the first thing about which we are asked, during the convalescence.

We know that eclampsia gives a certain immunity and is not likely to recur in a subsequent pregnancy. On the other hand, if a patient once suffers from a nephritic toxemia, this is likely to return with each pregnancy.

Further, we can be pretty certain if a patient gives a history of suffering from toxemia each time she is pregnant, that we are dealing with a nephritic toxemia.

Pathology.—If we now consider the pathological picture in these cases that come to autopsy, we are able to distinguish two groups, according as we find certain changes in the liver or not. These changes consist of larger or smaller areas of necrosis either with or without hemorrhage, and the areas are situated at the periphery of the liver lobule.

Attention is specially called to these by Schmol, who considers them characteristic of eclampsia and claims that they occur in no other disease. In addition to these lesions of the liver we also have more or less marked changes in the kidney, which later, however, may not be very pronounced. There are also other lesions present, but for our purpose we need not consider them here.

In the second group we do not find these necrotic changes in the liver, but some form of nephritis.

I think this is sufficient to indicate that pathologically we can distinguish eclampsia from nephritic toxemia.

Clinical Picture.—Generally speaking, *clinically* we meet with several types.

One, probably the most common, in which the onset is practically a convulsion. However, in these cases, on careful inquiry one usually finds that premonitory symptoms have been present, but of such slight nature, as to be ignored by the patient.

Another type consists of symptoms of toxemia such as headache, edema, which may be general and extreme, visual disturbances, and epigastric pain. These symptoms may persist for a longer or shorter time, and may terminate in one of several ways. Under treatment, they may entirely clear up, and the pregnancy go on to a happy conclusion, or they may only partially subside till after the end of pregnancy, or they may become more severe, and end in convulsions and coma, which the patient may, or may not survive.

In a *third* type, we may get various symptoms of toxemia, ending in coma without convulsions.

In certain of these cases, from the clinical pictures and the ordinary clinical examinations, we can say *"This is elcampsia."* Whereas, in certain others, we can say *"This is uremia."* But there will be many cases in which we will be in doubt as to whether we are dealing with eclampsia or uremia, or just how much kidney involvement is present. Of course, we must remember that occasionally, an eclampsia will

damage a kidney to such an extent that it does not recover, but leaves a chronic nephritis, but this is rare.

Urine Findings.—The ordinary examination of the urine is not very helpful in differentiating these conditions. The usual findings are diminution in the total output of urine, the presence of albumen, which may be in very large amounts, a decreased total nitrogen output, a quite marked diminution in urea output, the percentage of nitrogen eliminated as ammonia may be either greater or less than normal, and the nitrogen rest is usually increased, thus showing a marked metabolic disturbance.

On microscopic examination of the urine we may find all varieties of casts, and these may be present in great numbers. As the patient's condition improves, the urine gradually clears up, though a trace of albumen may persist for some weeks, even when there is no permanent injury to the kidney.

The presence of albumen even in very large amounts, and casts, in the urine, does not necessarily mean an extreme grade of nephritis. This was well illustrated in a patient whom I saw while interne. This case was reported in full by Slemons as eclampsia without convulsions. The history briefly is as follows:

The patient had apparently been well up to about the seventh month of pregnancy, when she awoke one night with intense headache. This rapidly grew worse, and in a short time she became unconscious and was sent to the hospital, where she died about three hours after admission, having been deeply comatosed, but with no sign of convulsions. The urine showed twenty-five gms. of albumen to the litre, and was loaded with all varieties of casts, and a clinical diagnosis of uremia was made. But at autopsy, the kidneys, on gross examination, appeared absolutely normal, while a microscopic examination showed only parenchymatous degeneration. The liver, however, showed areas of peripheral necrosis, typical of eclampsia. This case impressed me strongly that even an extreme amount of albumen and numerous casts could be present in the urine, with very little demonstrable change in the kidney.

So it is evident that the quantity of albumen and the number and character of the casts in the urine will not help us in differentiating the eclamptic from the nephritic toxemia.

Usually with eclampsia there is a very marked diminution in the total output of urine and the total nitrogen output, while in nephritic toxemia these are usually not so markedly diminished. The only help afforded us by the determination of the ammonia co-efficient is in regard to prognosis during an attack. Usually, where the ammonia co-efficient is slightly greater than normal, i. e., from 7 to 10 per cent., the prognosis is more favorable, while in most of the fatal cases, it is found to be below normal, in the neighborhood of 2 or 3 per cent. Of course we must remember that there have been cases reported of eclampsia without the presence of albumen in the urine.

Catalytic Activity of Blood.—Recently Winternitz and Ainly have made some interesting observations of catalytic activity of the blood in these conditions. Winternitz has shown that in the blood and various tissues of the body, there is an enzyme, catalase, constantly present, which has the power of splitting hydrogen peroxide into water and molecular oxygen. He has studied the catalytic activity of the blood and various tissues in both man and animals, in conditions of health and various diseases. He finds that in health the catalytic activity is quite constant for a given individual, and the physiological variations fall within fairly narrow limits.

His observations on patients suffering from nephritis are of great interest. In the milder grades, with only slight kidney insufficiency, the catalytic activity is only slightly decreased, while in more severe grades of nephritis with marked kidney insufficiency, the catalytic activity is markedly decreased. His lowest figures are found in uremia, and as the uremia is recovered from, the catalytic activity increases.

Winternitz and Ainley have tested the catalytic power of the blood in normal pregnant and puerperal women, and have found that it does not differ from the normal non-pregnant individual.

They also made observations on ten patients suffering from toxemias in the latter half of pregnancy and found that they could be divided into two groups. *Seven* cases are included in the first group, in which the catalytic activity of the blood was found to be normal.

Two of these patients came to autopsy and characteristic lesions of eclampsia were found in the livers. In these two cases the catalytic activity of the tissues was likewise normal.

In the *second* group were the remaining *three* cases, and these gave a low figure for the catalytic activity of the blood, thus showing a marked kidney insufficiency.

Winternitz and Ainley reached the following conclusions:

1. The catalytic activity of the blood appears

to offer a means of differentiating the toxemias of pregnancy into two groups.

2. In certain instances the catalytic activity shows no departure from normal; these include cases of eclampsia and other toxemias without marked renal involvement.

3. In certain other cases the catalytic activity of the blood is decreased; these include patients suffering from chronic nephritis, in whom the increased work thrown upon the kidneys by the pregnancy brings about renal insufficiency, as well as cases of true eclampsia and other toxemias with marked renal involvement.

Blood Pressure.—When Erlanger devised his apparatus for determining the maximum and minimum blood pressure, Slemons and I made numerous observations on both normal patients and those suffering from toxemias during the latter weeks of pregnancy, and the first two weeks of the puerperium. Our observations on normal pregnant and puerperal women were published several years ago. We found that normally in the latter weeks of pregnancy, both the maximum and minimum pressures were somewhat higher than in non-pregnant women, usually, however, not more than from 15 to 30 millimeters.

But in one patient the maximum pressure reached as high as 190 millimeters mercury several times, during the last days of pregnancy. In the puerperium the pressure dropped rapidly and was usually at the normal level in two to three days after delivery. Our observations on patients suffering from toxemias have not yet been published.

Before discussing the behavior of the blood pressure of the toxemias I would say that though we observed both the maximum and minimum pressures, we found that the observation of the behavior of the maximum pressure was of much more importance than of the minimum; and for practical purposes was of just as much value as the observation of both. So I will only discuss the behavior of the maximum pressure.

During an eclamptic attack this will usually be found to be very high, in the neighborhood of 200 millimeters mercury. However, it *may* be only slightly elevated, and I recall one patient whose pressure was only 150 millimeters between convulsions, and reached its highest point of 170 millimeters just at the onset of a convulsion.

In pre-eclamptic toxemia, the blood pressure may or may not be markedly elevated, and as a general rule, patients with high blood pressure are more likely to have convulsions.

In nephritic toxemia the blood pressure is always high, though often no higher than in eclampsia.

The most interesting feature of blood pressure observations in toxemia is the behavior during convalescence.

In the convalescence of eclampsia where there is no permanent renal injury we find that the blood pressure falls rapidly and usually reaches the normal level in a week or ten days.

On the other hand, in nephritic toxemia, we find that though there is a considerable fall during convalescence, this fall takes place much more slowly, and the pressure usually remains 15-30 millimeters above the normal.

In the patients whose catalytic activity was studied by Winternitz and Ainley, blood pressure observations were also made. It was found in those cases with normal catalytic activity, that the blood pressure fell rapidly to the normal level, while with the patients showing a low catalytic activity the blood pressure fell much more slowly, and did not reach the normal level.

So it is evident, from a study of the catalytic activity of the blood and of the blood pressure, that in doubtful cases, we have a means of differentiating eclampsia from nephritic toxemia.

From what has been said I hope I have indicated that we can differentiate these two toxemias both clinically and pathologically, and I would even go so far as to insist that in patients coming to autopsy, with a clinical diagnosis of eclampsia, that unless we find the characteristic changes in the liver described by Schmol, that the clinical diagnosis be corrected and made to conform with the pathological findings.

I realize that there are a great many points which have not been mentioned at all, in this discussion, and others which have only been touched on, but I hope I have shown that these cases deserve very thorough study, not only in the hope that we may eventually solve these problems, but that even now we will be able to give a correct prognosis for pregnancies occurring after one of these toxemias.

TREATMENT OF FRACTURES AND JOINT INJURIES.*

W. T. Dodge, M.D., F.A.C.S.
BIG RAPIDS, MICH.

No class of cases coming under the care of the surgeon is of more importance than the proper handling of fractures and joint injuries. Speaking in a general way, no other afflictions of humanity are so badly handled as are these injuries. A very large percentage of the malpractice suits brought against members of the profession are on account of unsatisfactory results following their treatment. It is therefore a subject that should receive careful consideration and thorough study at the hands of every man who may be called upon to treat injuries. It is of especial importance that surgeons working for Industrial Corporations or Insurance Companies, or Public Service Corporations, should become competent in the treatment of all classes of injuries and particularly of fractures and joint injuries, because records are kept of results and if a given surgeon shows a high percentage of delayed unions, deformities, etc. he cannot expect to long continue an employee of these corporations.

Fractures.—The first consideration is correct diagnosis, for proper treatment cannot be applied until the exact nature of the fracture is recognized. This can be done only by a thorough examination under an anesthetic, supplemented oftentimes by an X-ray examination. When possible, in fact, an X-ray plate should be made in all cases of fracture both before and after replacement for the protection of the surgeon if not for the advantage of the patient. When it becomes necessary to care for a patient in his home for a fractured leg, and a portable apparatus is not available, I am not of the opinion that the patient should be transported to a machine and back for the sole use of the X-ray. This movement of the patient might be prejudicial to the progress of healing in the bones and might lead to the displacement of bone fragments, that had been properly adjusted. We should be careful about stating that an X-ray examination is always necessary as by that we might wrong a colleague, but for our own protection we should secure an X-ray plate before discharging our patient.

Diagnosis having been made, reduction of the fragments is absolutely essential and once reduced immobilization should be secured by application of appropriate splints and casts. The splints used will depend upon the location of the fracture. A Colles fracture if properly reduced actually needs no splint, although it is best to apply a simple one for a few days. Bad results in Colles fractures are due to imperfect reduction and to immobilization for too long a period. Early massage and passive movements are necessary to secure perfect results.

Fractures of the femur if treated by the closed method should, except in children, always have Buck's extension applied for a time. All other fractures of the long bones may be treated for a few days by means of simple splints, the simpler the better. The surgeon may usually be able to construct a suitable splint on the ground, which is much better than an expensive ready-made one. In a few days, swelling having subsided, a cast should be applied, well padded over bony protuberances, and the patient encouraged to move around. It is important not only to restore the function of the injured extremity, but to do so with the least loss of time to the patient. More time is lost through weakness of muscles growing out of their disuse than is consumed in the healing of a simple fracture. Early passive motion should be used in neighboring joints and the patient should be encouraged in the early use of the injured limb. By these means much valuable time will be saved the patient, for as soon as the bone is united the limb should be as strong as it was before the injury. Frequent inspection, however, is absolutely necessary to insure oneself that the broken bones remain in apposition. Involvement of the joint calls for special care and makes it imperative that early passive motion shall be adopted. Otherwise the joint will become ankylosed and arthroplasty finally become imperative if normal functionating is secured. A successful arthroplasty calls for the use of much passive motion and so much time and suffering may be saved if the joint is properly treated after the original injury. In sprains of the ankle, strap and enjoin early use. Do not apply a cast or splints. Early application of heat is of value in all sprains. When acute symptoms have subsided, strapping, passive motion and use of the joint are proper procedures. This outline embraces my views of the proper treatment of simple fractures and simple sprains in which there is no doubt about the diagnosis nor concerning the perfect reposition of the broken bones. I am aware that Lane advocates the open treatment of all simple fractures and also that it has been demonstrated that the final results in large series of cases are much better by this method than by the non-

*Read before the Semi-Annual Meeting of Local Surgeons, P. M. R. R., Grand Rapids, May 24, 1916.

operative treatment. Therefore, if the patient is in a hospital and a surgeon is at hand who has had experience in the technic of operative treatment and who has mastered it, operation is advisable in all cases of fracture of the long bones. If the patient is in a private house and under the care of a surgeon, no matter how eminent, who has not thoroughly mastered the operative technic of fractures, operation had better be avoided and if it finally becomes imperative the patient should be transferred to a hospital and placed in the hands of a man proficient in this field. Many cases require operative treatment if perfect functional and anatomical results are secured. The selection of these cases rests upon the surgeon's ability to interpret the X-ray. In a general way the indications for adoption of the operative method are as follows:

1. Certain oblique or spiral fractures of the femur.
2. Fractures with interposed soft parts.
3. Certain oblique fractures of both bones of the leg.
4. Certain fractures near the knee and ankle joints.
5. Fractures of the clavicle.
6. Fractures of the inferior maxilla near the angle or in jaws from which the teeth have been extracted.
7. Comminuted fractures of the long bones.

Lane mentions as advantages of operative treatment:

"1. Immediate relief of pain produced by movement of fragments.
2. Relief from tension and discomfort of extensive extravasation of blood.
3. Early restoration of function.
4. Restoration of original mechanics."

As absolute contra indications he mentions "An indifferent surgeon who cannot keep his fingers out of the wound and who has not a thorough grasp of the anatomy of the part, untrained assistants, unsuitable environment and incomplete equipment." He places special emphasis upon absolute immobilization following operation and further does not recommend plating in compound fractures. In fact Lane's work owes its success to an almost perfect technic. If this cannot be applied in a given case it is better to chance a crooked arm or a shortened leg than to court septic infection from bad surgical interference.

One writer says "Operative treatment of fractures should be as solemn a procedure as a laparotomy, where failure means a blot on the escutcheon of the hospital and operator." When operative treatment is decided upon the choice at present lies between Lane's plates and Albee's autogenous bone inlay or graft. One writer recently has reported a few cases treated with heterogenous intra-medullary bone pegs with satisfactory results. If this method should prove satisfactory it may become the operation of choice for it is a serious objection to the Albee method that to carry it out a wound must be inflicted upon another bone in an already afflicted individual. In ununited fracture the autogenous bone graft is undoubtedly superior to the metal plate. The popular belief that bad sprains are more serious than fractures is only true when a simple sprain has been immobilized too long or when an unrecognized fracture exists in association. Nowhere has the X-ray been of more value than in disclosing the existence of fractures in and about joints. Much uncertainty is attached to the use of the word sprain. It has been applied to all kinds of joint injuries in which the skin is unbroken. It is obviously wise to restrict its use to injuries in which there exists no more serious lesion than temporary interference with the function—a twist without evidence of laceration of ligaments or fractures of bones. This limitation has been in mind in the suggestions I have made concerning treatment.

THE TREATMENT OF BURNS.

C. N. Sowers, M.D.
BENTON HARBOR, MICH.

In looking over the various text books on surgery, the physician is disappointed at the very meagre space devoted to burns and their treatment. Not much work has been done on the pathology, cause of shock or toxemia. As burns are among the commonest of lesions, and the results, so far as the restoration of function is concerned, are sometimes so disastrous, it would seem that more attention should be paid to this important branch of surgery.

Authorities claim that if one-half the cutaneous surface is burned, no matter how slightly, the case will probably prove fatal. Even if one-third or one-fourth of the surface be burned the prognosis should be very guarded.

The somewhat arbitrary division of burns, by Hebra, of the first, second and third degree is well understood by all. Of course many burns have all three of these divisions and it is often difficult to sharply define these degrees in a given case.

*Read before the Semi-Annual Meeting of Local Surgeons, P. M. R. R., Grand Rapids, May 24, 1916.

I believe burns are poorly treated as a rule, and I venture to say that no physician is ever fully satisfied with his work. The numerous drugs advocated in the treatment of burns, would seem to corroborate this statement.

Having had under treatment, for sometime, an extensive burn of the left leg from ankle to and including most of the left hip, a portion of the right hip, also the left hand, I will summarize my experience with this case and some of the methods now in use by good men in the profession.

The first indication in the treatment of burns is to relieve the pain and combat shock. One writer says, after removing the clothing and dressing the burns he gives a hypodermic of morphine. Why this delay? As pain is one of the causes of shock, and to prevent shock is of first importance, it is my custom to give immediately, morphine, atropine and strychnine hypodermatically. In removing the clothing it is advisable, when possible, to place patient in a bath to which a handful of borate or bicarbonate of sodium has been added. One should cleanse the surface as thoroughly as possible. If it is necessary to give an anesthetic for this purpose I would not hesitate to do so, if patient's condition permits. Every burn is sterile, and we must endeavor to keep it so by being as careful as we would in any surgical wound.

As before stated we must be on the alert for shock. Whatever be its cause, vaso-motor or cardiac, it must be treated as surgical shock. Raise the blood pressure by every means available, morphine, atropine, strychnine, camphor, adrenalin ten drop doses of a 1/1000 solution hypodermatically. These do not need to be often repeated or we may over-stimulate our patient. Normal salt by hypodermoclysis as soon as indicated. We must be on the lookout for late shock. By this I mean after eighteen to twenty-four hours. I nearly lost my case, referred to in this paper, after eighteen hours. He was apparently doing well when suddenly he became pulseless, cyanotic, and all the symptoms of impending dissolution. It took some hard work for six hours to tide the patient over.

One important thing to remember is to watch the kidneys closely. Often there is partial or complete suppression of urine. Make sure it is not retention. I usually urge my patient to drink plenty of pure water and sometimes add a little citrate of potassium.

The treatment of the burn, after as thorough cleansing as possible, depends on the extent of the burn, whether it be of the first, second or third degree. If it is merely of the first degree the application of a solution of picric acid, one-half to one grain to the ounce of water, applied for a few times and followed by cold-cream or carbolized vaseline, and your patient is well in a short time. Better than picric acid, in my somewhat limited experience, is a 2 to 5 per cent. solution of aluminum acetate. Keep the surface constantly moist with it, after covering with sterile gauze. This solution, as recommended by Ravogli in the *Journal of the American Medical Association* of July 24, 1915 seems to meet the indications. It relieves the pain, is antiseptic, and is equally efficacious in burns of any degree. I have tried it in a few cases and believe it is as good as anything I have ever used as a routine measure.

In burns of the second and third degree; remove the dead skin with sharp scissors, as soon as easily detached, but not before. Forcibly detaching may open up avenues for absorption and lead to general septic infection. When the skin and underlying tissues are mummified and cannot be detached a number of openings should be made in them to drain off the accumulated pus.

In bad suppurating surfaces bi-chloride dressings of 1/4000 to 1/2000 solutions usually cleans them up in a few days. The danger of mercury poisoning is practically nil.

So much depends on the judgment of the physician in dealing with burns during the healing process. At some stages possibly a dusting powder such as steaerate of zinc, bismuth and boric acid may act well. Or some bland ointment may serve us best. Again, excessive granulation may have to be subdued with a 3 per cent. solution of silver nitrate.

Epidermization may be hastened in the little islands that appear, or at the margins by the application of scarlet red. Balsam of Peru 25 to 50 per cent. in castor oil often serves this purpose well when the granulations are pale. One other method known as the Sneve method, namely exposure of the burnt area to the air for a short time, say one to three hours if the patient can stand it. In treating the bad case, to which I have previously referred I exposed the limb to the air for one hour at first, then longer, and later to the direct rays of the sun. The actinic rays seem to exert a very good effect, so much so that the patient noticed it and was anxious each day to stand the discomfort necessary for treatment. The sloughing watery secretions are soon dried up by the open air treatment. It is best to cover the surface, after exposure, with gauze or dusting powder. Some use ointment of boric acid in petrolatum.

Better than these is gauze moistened and kept so with 3 per cent. aluminum subacetate. I have also found that strips of gutta percha laid criss-cross over the surface prevents the gauze from sticking when removed. I do not use carron oil or other oily substances any more. They retain de-composing materials and favor absorption.

One should ever be on the alert for kidney complications. Analyze the urine frequently, and about once a week give mild chloride followed by saline cathartic.

In burned areas of large size without a tendency to the formation of epidermis a few skin grafts may be necessary to start epidermization.

612 Territorial Road.

THE URINARY DIAGNOSIS OF PREGNANCY.

H. A. Sharpe, M.D.
L'Anse, Mich.

It is not the desire of the writer to convey the idea of presenting something entirely new in the field of the Urinary Diagnosis of Pregnancy but rather to put within reach of the average physician a method which is accurate and at the same time easy in execution and which is devoid of those scientific principles which carries Abderhalden's serum reaction beyond those that have not the facilities of a well equipped laboratory and hospital.

In general practice many patients hesitate to submit to lumbar puncture or aspiration of blood from the median basilic vein. Although it is a minor operation it appears to the patients as a mountain and many times it is more serious to them than their approaching confinement. It has been for that reason I have tried to perfect a method to use urine rather than serum. With our modern and careful diagnosis of gynecological conditions we are frequently called upon to determine the presence or absence of a pregnancy.

It has been proven conclusively that blood serum contains several proteolytic enzymes, one of which function is to split up, digest, or proteolyze foreign protein into amino and other organic acids which circulate in the blood stream.

This is true not only in pregnancy but also in connection with the various malignant growths, carcinoma, sarcoma, angic sclerotic changes, and also transplants of thyroid, suprarenal, pancreas and occasionally of the spleen.

Abderhalden has shown through experimental study that the phenomenon of assimilation of foreign material introduced directly into the blood stream revealed a number of facts pointing to the tendency of the cells to elaborate a specific mechanism by means of which the cells are able to protect themselves in a specific manner against the injurious effects of disturbances of their normal nutrition. This protective mechanism consists in the formation in the cells of new and specific ferments, which directly attack the foreign material as in Ehrlick's theory regarding anti-bodies. These specific ferments according to Abderhalden, at a certain stage in the process may appear detached from the cells and be found circulating free in the blood.

The presence in the blood of an individual of these specific ferments or enzymes, not existing there normally, shows that there is present in that individual, a proteolytic activity which, when brought in contact with a corresponding proteid under certain conditions, is capable of splitting that proteid into amino and other organic acids.

Abderhalden's original technic was using blood serum in parchment dialysing thimbles with "Ninhydrin" negative placental sub-strate. To carry out this correctly is a very delicate operation.

In "Ninhydrin" we have a very convenient and at the same time reliable reagent for determining the presence of amino compounds, resulting from proteolytic digestion.

Working on the basis that these proteolytic enzymes are present in blood serum and spinal fluid there is no reason why these enzymes should not be present in the urine, although possibly in a lesser degree.

Kiutsi, who has done a great deal of work on this line, and using the Biuret reaction, states that he has "repeated this method several hundred times and never missed." This statement has been greatly exaggerated for none of our American observers have been uniformly successful. In my experience I have found the Biuret unreliable, that it has been positive with known non-pregnant urines, and many times will be positive to Biuret and negative to Ninhydrin.

The most essential feature is the proper preparation of the placental sub-strate which I will describe in detail as follows:

PLACENTA SUB-STRATE, DRIED.

1. A placenta from a normal healthy woman, free from contagious disease is washed to remove clots and excess of blood.

2. With sharp curved scissors, the spongy placental tissue is absolutely freed from membranes and fibrous tissue, is cut into small pieces the size of a pea.

3. This portion is then washed, alternately with water and normal saline, until the tissue is perfectly white and the wash water is entirely free from hemaglobin.

4. It is then washed in running water until free from chlorides when tested with $AgNO_3$ T. S.

5. A small piece of the substrate is then boiled in 10 cubic centimeters of water for five minutes and tested with Biuret. Washing must be continued until the Biuret is negative.

6. A small portion subsequently tested in a similar manner until negative with the Ninhydrin reaction.

7. The placental tissue is carefully drained and placed on a glass plate and dried at around 80° C. or over a steam radiator, for twelve hours at least or until it is perfectly dry. This may be determined by testing a small portion in a dry sterile mortar.

8. When perfectly dry it is finely powdered and placed in a clean, dry glass stoppered bottle.

A freshly passed specimen of urine from a pregnant woman is tested for the Biuret reaction and if positive 30 cubic centimeters of the urine are shaken with 2 gm. of Kaolin for at least ten minutes and filtered. This should be repeated until Biuret negative.

A urine that is strongly acid should be neutralized with 2 per cent. NaCo.

Several authorities use toluene to inhibit bacterial action but I have discarded it as unnecessary and only adds one more complication.

In filtering urine to be tested always use Munktells Swedish filter paper as ordinary filter paper contains organic impurities.

Always carry controls.

METHOD OF TESTING URINE.

Test Tube No. 1. Take 10 cubic centimeters of a known non-pregnant urine, which conveniently may be a male urine. Add gm. .2 of placental substrate.

Test Tube No. 2. Ten cubic centimeters of the urine to be tested are prepared as previously stated. .2 gm. of placenta substrate are added.

Test Tube No. 3. Ten cubic centimeters of the urine to be tested is used as a control and no substrate are added.

These are then incubated for twelve hours. It is not necessary to use an expensive incubator, this process may be completed over a steam radiator or over an electric pad or in close proximity to an electric bulb. After incubation 5 cubic centimeters of the super-natent liquid is removed from each tube and placed in three corresponding tubes and labeled thus: 1-1, 2-2, 3-3.

To each of these test tubes are added .2 cubic centimeters of 1 per cent Ninhydrin test solution and each test tube is boiled *exactly one minute* from the time the first bubble appears on the sides of the tube. Care must be taken that the same degree of evaporation and concentration takes place in each tube. A purple, lilac, amethyst or purplish rose color indicates a positive reaction. Occasionally it takes from one to eight hours for the color to fully develop.

INTERPRETATION OF RESULTS.

Test Tube 1-1 will be negative with correct technic and proper substrate.

Test Tube 2-2 will show with pregnant urine a purple, lilac, amethyst or purplish rose color in from a few minutes to several hours depending upon the intensity of the reaction.

Test Tube 3-3, in only rare cases where albumin is in excess, in grave malignant disease or in error in technic will this tube show a positive reaction.

It is essential to carry on controls in this manner to prevent error in technic, use of proper substrate and to determine the delicate color reactions.

It has been my experience that there is little difficulty in determining a pregnancy after the fourth month. During the second month proteolytic action is so weak that in only one case was I able to obtain a positive reaction. I have obtained several positive reactions in the third month.

URINE FROM A CASE OF ECLAMPSIA.

While carrying on this experimental work I had the unfortunate experience of examining the urine from an eclamptic patient. While doing the routine urine examinations during pregnancy, I noted one urine that gave a most decided and intense color reaction. Using this same urine which contained very little albumin, I made the following dilutions, 1:1, 1:2, 1:5, 1:10 and 1:20. The dilution 1:10 gave as positive a reaction as many of my cases during an ordinary pregnancy. Dilution 1:20 gave a faint and questionable reaction. This patient died seven days later.

My experience is limited to one case only so, of course, can draw no conclusions, only a suggestion.

May we not have the experience of authorities

who have unlimited clinical material and the advantages of well equipped laboratories?

Is it not possible that work along this line may throw some light on the old theory of placental proteolytic action in the etiology of eclampsia?

CONCLUSIONS.

1. That in the "Ninhydrin" reaction in a pregnant urine properly prepared, we have a very reliable test for pregnancy.

2. A marked positive reaction indicates, beyond a reasonable doubt, pregnancy. I have had a faintly positive reaction persist in a case of pregnancy for four months subsequent to confinement in a case of carcinoma uteri. I have had one positive reaction in a case of primary carcinoma of the bladder.

2. That a negative reaction in a doubtful case is of more value in ruling out pregnancy than a positive reaction would be in confirming it.

4. That the anti-tryptic action present in certain urines may, in rare instances, be due to other pathologic conditions.

5. The results of my experiments have been uniformly successful; cases tested during the second month and being negative subsequently were shown to be positive.

6. Placental sub-strate and Ninhydrin may be prepared, ready for use, by any of the large pharmaceutical houses.

7. What would be the possible value of a quantative reaction—Ninhydrin—in a case of threatened eclampsia? Is it not possible, with a quantative test, we have a method that may be of early diagnostic value in eclampsia?

OCULAR EVIDENCES OF VICARIOUS MENSTRUATION.

J. E. Gleason, M.D.
DETROIT, MICH.

Under the heading of disturbances of menstruation, the *Index Medicus* since its conception in 1879 records approximately fifty-seven references to articles published in the literature of the past thirty-six years concerning so-called vicarious menstruation. A review of the partial list of these references accessable shows the location of the vicarious bleeding to be most frequently the nose, with the lungs, stomach, breasts, rectum, gums, throat, larynx, lips, skin, kidneys, bladder and fingers following in approximately the order named. Many of these articles deal with cases which are incomplete in essential details, or are otherwise open to suspicion as possible errors in diagnosis. Many others in which the diagnosis is not so suspicious, fail to definitely comply with the essential requisites for classification as typical vicarious hemorrhages, namely, that normal menstruation must be absent, that the vicaris manifestation must have a corresponding regular periodicity, and that this manifestation must be in or from an otherwise normal organ. Hemorrhages arising from diseased tissues, which in themselves might present evidences of bleeding, really should be excluded unless normal menstruation is absent, and marked periodicity is observed over an extended period. In view of the rarity of well established cases of this character, the following case is presented.

Mrs. X aged 36 was seen May 17, 1915 on account of a very marked injection of the bulbar conjunctiva of the right eye which had suddenly appeared the previous day. As there was no purulent secretion and no pain in the eye, a simple collyrium was prescribed, and in about two days the redness entirely disappeared. She was then refracted and found to have one-half diopter of simple myopic astigmatism against the rule, for which she received and has since been wearing correcting lenses. June 7 she again returned with the same injection present, and more careful questioning revealed the following history. She had always been well as a child, without any serious illness.

Her menstruation appeared at thirteen, was always regular and without pain. She was married at 17, and has one healthy child, 16 years old. Seven years ago on account of pain in the right side she had a right salpingectomy with opening of several cysts in the corresponding ovary, which, however, was not removed. About five years ago, the left tube and ovary were removed *in toto* for a condition of hydrosalphinx. Following this operation, menstruation entirely ceased, no local manifestation of it has since appeared, and the patient has experienced many of the classical symptoms of an artificial menopause. About three years ago she developed symptoms of a gastric ulcer, with pain in the epigastrium which was relieved by eating, and with a point of marked tenderness over the pyloric end of the stomach. At this time she had several attacks of hematomesis. Just how many or with what regularity she is not sure. These symptoms disappeared on treatment with bismuth and iron. The conjestive disturbance on the part of the eyes has been more or less constant for the past nine or ten months, and various local remedies have been tried without influencing the return of the condition. Preceding the conjunctival injection there is severe pain in the head with hot flashes and general symptoms of the onset of the menstrual period. The conjection of the conjunctiva has never appeared in both eyes at the same time, although each eye has shown the condition separately. Occasionally there are short periods of amaurosis during the attacks, lasting several minutes. All symptoms usually disappear after two or three days to reoccur again in the course of several weeks. The patient was seen with similar

symptoms July 3 and August 9. In July the temporary blindness was especially marked, lasting about twenty minutes. Ophthalmoscopic examination made within one-half hour after recovery of sight failed to show any fundus changes. Examination of the blood and urine has failed to show any abnormalities.

Cases of ocular disturbances associated with the menstrual period which I have been able to find in the literature are as follows:

(1) McKay, *American Journal of Medical Sciences,* 1882, under the title of Eye Diseases from Suppression of Menses, reports twelve cases in unmarried young women showing inflammatory diseases of the interior of the eye, generally the optic nerve or retina or both, of both eyes. According to the author relapses occurred so often at the time of the menstrual disturbances that the connection between them seemed most conclusive. When normal menstruation was re-established and maintained, the ocular symptoms were much relieved or disappeared entirely. In one case only was there subconjunctival hemorrhage, which occurred only once.

It seems only fair to note that all these cases were amnetropic, and apparently suffering from asthenopia. Correction of the refractive errors and general treatment together produced results. From the case histories, one is somewhat in doubt regarding the proper diagnosis of neuro-retinitis in a majority of the cases.

(2) Wiltshire, *Lancet,* 1885, cites a case of Rachborski, of monthly hemorrhage into the anterior chamber, and a similar case of Pagets seen at Moorfields the small effusion of blood being absorbed during the intervals. No further details are given.

(3) Barnes, *British Gynecological Journal,* 1887, reports among others, a case of profuse ecchymosis of both eyes at the menstrual period. Some blood escaped from the surface, and some was effused under the conjunctiva to be gradually absorbed, passing through all the stages of ecchymosis of the eye from direct violence. Whether normal menstruation was absent is not stated.

(4) Guèpin, *Annales d'Oculistique,* Vol. XLVI, (cit Barnes)reports the case of a girl aged 18 whose menstruation began at 15. The periods returned every thirty-two to thirty-three days with tolerable regularity, lasting sometimes but one day, at others five or six days. She always found that on the cessation of the menstrual flow, there had been a supplemental epistaxis, this being more or less abundant in proportion to the quantity of menstrual flow lost. On one occasion the epistaxis did not occur, and then a sudden effusion of blood into the anterior chamber took place. The menstrual discharge of this occasion only lasted two hours. The lower part of the anterior chamber was filled with blood which extended over the free margin of the iris.

(5) Davis, *Ophthalmic Record,* 1897, reports a case of vicarious hemorrhage into the eye at the menstrual period. A married woman aged 22, the first day after the establishment of a scanty menstruation, suddenly lost vision down to 4/200 in the left eye. Ophthalmoscopic examination showed a hazy fundus with a triangular white spot 4 millimeters temporally and below the disc. In the center of this area was a small red spot from which extended forward and upward into the vitreous a cone shaped hemorrhage. In three months vision was increased to 20/100. The author thinks the hemorrhage was due to increased pressure in all vessels from almost complete suppression of the menses. The added factor of a chronic constipation is also pertinent. The hemorrhage in this case occurred only once.

(6) Liebreich, (cit. Barnes) has figured in his ophthalmological atlas an example of retinal hemorrhage after suppression of menses.

(7) Mueler, *Zehenders Monatsblatter fur Augenheilkunde,* 1893 (cit. Davis) reports a case of a woman who had menstruated regularly since 15 years of age, and who from her 24th year had a recurrent conjunctivitis with marked chemosis at each menstrual period, until she married and became pregnant. During three pregnancies, the conjunctivitis ceased, to return between times. The author called this a case of chemosis menstrualis.

(8) Friedenwald, *Journal of Eye, Ear and Throat Diseases,* 1896, (Cit. Davis) under the title of Affections of the Eye and Normal Menstruation reports two cases of punctate keratitis, one case of conjunctivitis, one case of iritis and two cases of hemorrhage into the vitreous which recurred regularly at the menstrual period for a number of months. The cases of iritis and vitreous hemorrhages however occurred in previously diseased eyes. His opinion was that menstruation acted only as an exciting cause, through increased general vascular pressure.

From a rather careful review of the literature, one is impressed with the fact that, in general, vicarious menstruation is a rare condition, and especially is it unusual to see evidences of this condition manifested on the part of the eye. The case here presented seems to comply accurately with the essential requisites for such a

diagnosis, in that there exists complete suppression of the menses over an extended period, a corresponding periodicity in the observance of the ocular symptoms, and the local manifestation is in an otherwise normal eye. Whether the hematomesis referred to showed any corresponding regularity, the patient is unable to remember. The treatment has been the use of iron, and ovarian extract, five grains three times daily. The result of the first month's exhibition of the extract was that for the first time in her history the patient had both eyes injected at the same time, the amaurosis was especially prominent, and the vasomotor symptoms were especially distressing. The last two months the injection has appeared as usual, but other symptoms, especially the headache, seem to have been very much relieved.

DERMOID CYST OF THE SPERMATIC CORD.

R. E. FOX, M.D.

SANTO TOMAS HOSPITAL—ANCON, C. Z.

In looking up the literature with regard to dermoid cysts of the cord, I was surprised by the rarity of this condition. Guiteras mentions such a case. Others, however, in treating the cystic diseases of the cord have failed to describe any such cases.

Recently a large strapping young negro came into Santo Tomas Hospital with the following history:

About one year ago he was confined to his bed with what the doctors told him was acute rheumatism, in which he suffered from joint pains, fever and excessive sweating; this lasted about seven days. At this time he noticed a small inguinal swelling which was neither painful nor tender. It remained this way until two months ago when it began to gradually enlarge; at no time did he suffer from pain, fever or any other subjective or constitutional symptoms. The only discomfort he experienced was a heaviness in the groin. He came into the hospital to be operated on for "rupture" as he called it.

Physical Examination.—Strong, well nourished negro; 27 years old. Inspection showed large inguinal swelling about the size of a pear, somewhat fusiform in shape with an inclination to roll over Pouparts ligament, extending from the area of internal to that of the external rings. There was no impulse on coughing. Both testicles were in the scrotum. Palpation revealed a slightly fluctuating mass that could not be reduced and extending into and a little below the external ring, but distinctly separate from the testicle. No Wassermann was taken. No puncture was done to ascertain the contents. In the diagnosis several conditions were thought of: I. Abscess of the inguinal glands. 2. Tubercular abscess from a possible spinal caries. 3. Section of sigmoid turned up in the inguinal region. 4. Fatty tumor. 5. Hydrocele of the cord, the latter of which was our tentative diagnosis because of his negative history.

Operation.—The patient was prepared for operation and a spinal anesthesia of 5 mgs. of stovaine was given. A long incision was made over the tumor which was found to be closely associated with the spermatic cord and bound down to surrounding structures by adhesions. After partial dissection the sac was opened and about 4 to 4½ oz. of a white flaky material with a peculiar penetrating and lingering odor escaped; at the same time a lock of golden hair passed out with the fluid. I knew then what we were dealing with, a dermoid cyst of the cord. The sac was removed and transplantation of the cord was done and the wound closed up with drainage.

The sac was taken to the hospital pathologist, Dr. A. M. Alden, who found hairs growing out of the inner walls, and confirmed our post operative diagnosis.

DO YOU KNOW THAT

Walking is the best exercise—and the cheapest?

The United States Public Health Service administers typhoid vaccine gratis to Federal employes?

A little cough is frequently the warning signal of tuberculosis?

Bad teeth and bad tonsils may be the cause of rheumatism.

Unpasteurized milk frequently spreads disease?

The air-tight dwelling leads but to the grave?

Moderation in all things prolong life?

The careless spitter is a public danger?

Diarsenol.—Diarsenol, Synthetic Drug Company, Toronto, Canada, is said to be chemically identical with salvarsan. It has not been examined in the A.M.A. Chemical Laboratory nor do any reports of trials appear to have been published which demonstrate its value or safety. As salvarsan is covered by United States patent the American agents for salvarsan will probably object to the sale in the United States of a substitute (*Jour. A.M.A.*, Feb. 19, 1916, p. 590).

Hexamethylenamin and Uric Acid.—If further evidence were necessary to show the futility of administering formaldehyd derivatives like hexamethylenamin as uric acid solvents, it could be found in the observations recorded by Haskins under the auspices of the Committee on Therapeutic Research of the Council on Pharmacy and Chemistry. While the administration of excessive doses may produce slight solvent action, Haskins points out that the required dose of hexamethylenamin is too large and an equal or better effect can be produced more readily by administration of alkaline diuretics or sodium bicarbonate in reasonable quantities (*Jour. A.M.A.*, March 25, 1916, p. 962).

Fifty-first Annual Meeting
Houghton, August 15-16-17, 1916

"Si quaeris peninsulam amoenam;" Michigan is a state of peninsulas, and not the least of them is the one which runs out into Lake Superior for a distance of fifty miles and includes the counties of Baraga, Ontonagon, Houghton, and Keweenaw. Here it is that the copper mines, which represent a large portion of the wealth of the state, are situated and here it is that the savage Indian roams the wilds of the streets and has pitched his tepee and has built up an institution of progressive government that makes him feel "heap" proud, and it is here also, that he hopes to welcome and entertain the big "Medicine Men" of the tribes who live to the south and with them make heap big Medicine and hold great Pow-wow! This great event will take place about two moons hence, in the month when the summer is in its prime.



TAMARACK HOSPITAL

Great preparations are being made for the event and a big smoke will be held, and all may bring their peace pipes with them, but their tomahawks must be left at home, for we, the great red men of the north, will stand for anything but knocking! Big Chief Medicine Man Hornbogen will come from the beautiful town beside the shore of the great GitcheGumee and will pitch his tent on the third floor of the Douglas House, Houghton. Heap Bigger Chief Vaughan will shoulder his tepee from where it has for long suns stood, by the side of Ann's Arbor and with strides equal to those of the brave Hiawatha will reach Houghton about the same time. Many other notable Medicine Men from Chicago and other centers will be present and after the Pow-wow this country will be better for their having come together. The people coming here will find many things of interest and which they can find in none other than a mining country. The mines are the largest, probably, in the world, and the system of mining is the most modern. Probably no other mining camp in existence furnishes to its citizens so much that is metropolitan. Our school system is the best and the school build-

ings are the equal of any in the state; the same may be said of the churches and in fact all public buildings. The country itself is rugged but that only adds to its grandeur and makes it the more interesting. The climate at the time set for the meeting is usually ideal, the temperature seldom going above 80 degrees and the trip should be a relief to those coming from farther south. The entertainment will be such that all of the country may be seen by the visitors, trips being made to the points of interest by automobile and boat. The massive machinery and the mining, milling, and smelting system of preparing copper for market will be an education to those who have not already seen it. The hotels furnish as good accommodations as can be secured in any large town centrally located and we can assure the members of the State Society who visit us every comfort and a really good time. A few cuts of the hospitals and some of the public buildings are to be found on the following pages of the *Journal.*

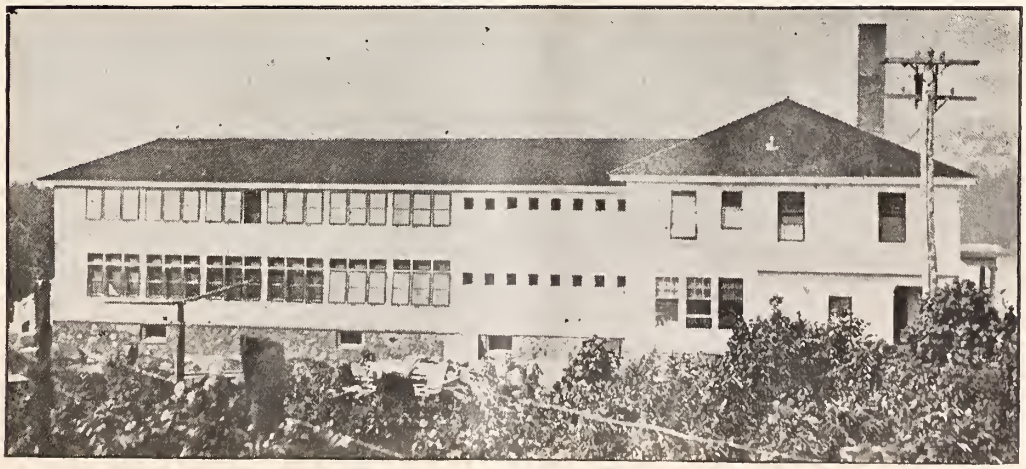
The program of entertainment will consist of a smoker on the evening of Aug. 15 at the Amphidrome at which refreshments will be served. On the afternoon of Aug. 16 auto rides and entertainment for the ladies at the Onigaming Club. On the evening of Aug. 16 the President's reception and dance will be held at the Masonic Hall. On Aug. 17 automobiles will be provided to take the members around the county to visit the various industrial institutions.



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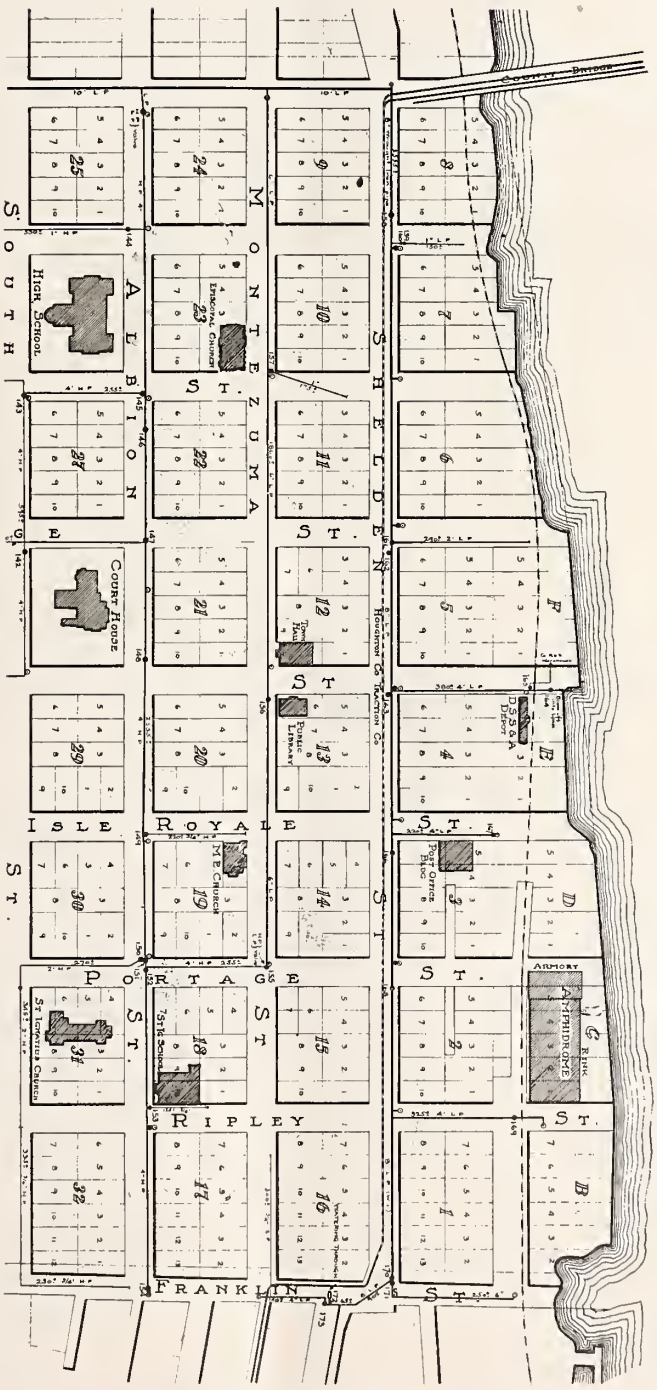
HOUGHTON TUBERCULOSIS SANITARIUM



HIGH SCHOOL, CALUMET



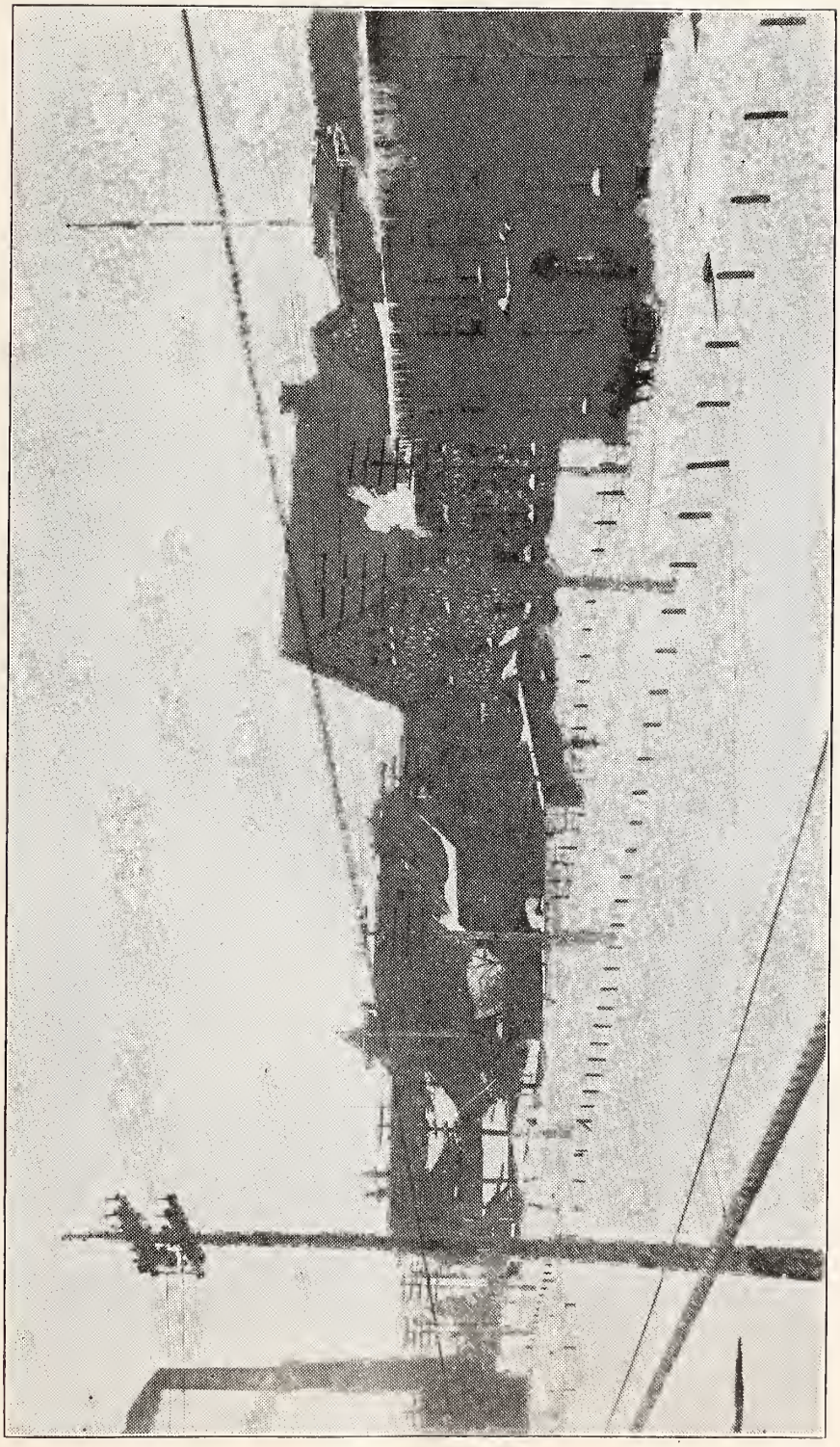
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HUBER HALL—MICHIGAN MINE COLLEGE

Official Program

Fifty-first Annual Meeting Michigan State Medical Society

at Houghton, Houghton County

August 15-16-17, 1916

OFFICIAL CALL

The Fifty-first Annual Meeting of the Michigan State Medical Society will be held in Houghton, Houghton County, Michigan on Tuesday, Wednesday and Thursday, August 15, 16 and 17, 1916.

The HOUSE OF DELEGATES will convene on TUESDAY Evening, August 15 at 8:00 p. m.; WEDNESDAY at 8:30 a. m.; THURSDAY at 8:00 a. m.

The COUNCIL will convene in regular session on TUESDAY Evening at 6:00 p. m.

The GENERAL SESSION will convene on WEDNESDAY Morning at 10:00 a. m. and on THURSDAY Morning at 11:30 a. m.

The COUNTY SECRETARIES ASSOCIATION will meet on TUESDAY Evening at 6:00 p. m.

The SCIENTIFIC SECTIONS will hold their regular sessions at such time and place as is designated hereafter in the program.

A. W. Hornbogen, President.
Frederick C. Warnshuis, Secretary.

PLACE OF MEETINGS

The HOUSE OF DELEGATES will hold their sessions in the Amphidrome.

The GENERAL SESSIONS will meet in the Amphidrome.

The COUNCIL will meet in the Parlor of the Douglas House.

The SCIENTIFIC SECTIONS will meet in the auditoriums designated in the Section Program.

THE COUNCIL

Chairman—William T. Dodge, Big Rapids.
Vice-Chairman—A. L. Seeley, Mayville.
Secretary—F. C. Warnshuis, Grand Rapids.

MEETINGS

Tuesday Evening, August 15 at 6:00 p. m.
Wednesday, August 16 at 12 noon.
Thursday, August 17 at 12 noon.

HOUSE OF DELEGATES

Meeting Place: Amphidrome

President—A. W. Hornbogen, Marquette.
Secretary—F. C. Warnshuis, Grand Rapids.

FIRST SESSION

Tuesday Evening, August 15th, 8:00 P. M. Sharp.

ORDER OF BUSINESS:

1. Call to Order by the President.
2. Roll call.
3. Report of the Committee on Credentials.
4. Reading of the Minutes of the last Annual Meeting.
5. Annual Report of the Council, W. T. Dodge, Chairman, Big Rapids.
6. Report of Delegates to the American Medical Association, L. J. Hirschman, Detroit.
7. Report of the Committe on Medical Education, Burt R. Shurly, Chairman, Detroit.
8. Report of the Committee on Legislation and Public Policy, A. M. Hume, Chairman, Owosso.
9. Report of the Committee on Venereal Prophylaxis, Udo J. Wile, Chairman, Ann Arbor.
10. Report of the Committee on Tuberculosis, V. C. Vaughan, Jr., Chairman, Detroit.
11. Report of the Committee on Public Health Education, Guy L. Kiefer, Chairman, Detroit.
12. Report of the Committee on Civic and Industrial Relation, Reuben Peterson, Chairman, Ann Arbor.
13. Election of Committee on Nominations.
 The duty of this committee is to nominate:
 (a) 1st, 2d, 3rd and 4th Vice-Presidents.
 (b) Two delegates to American Medical Association to succeed L. J. Hirschman and H. E. Randall.
 (c) To select place for holding the 1917 Annual Meeting.
14. Appointment of Business Committee and other Committees by the President.

SECOND SESSION

Wednesday, August 16th, 8:30 A. M.

1. Roll Call.
2. Miscellaneous Business.
 (a) Recommendations to the Council.
 (b) Proposals of ammendments to the Constitution and By-Laws.
3. New Business.
4. Report of Appointed Committees.

THIRD SESSION

Thursday, August 17th, 8:00 A. M.

1. Roll Call.
2. Unfinished Business.
3. Report of Committees.
4. Report of the Nominating Committee.
5. Election of Nominees.
6. Miscellaneous Business.
7. Adjournment **Sine die.**

DELEGATES AND ALTERNATES—FIFTY-FIRST ANNUAL MEETING

NOTE: Delegates name in black face type; Alternates in light face.

Complete list of delegates and alternates to be inserted in next issue.

GENERAL MEETING

Wednesday, August 16, 10:00 A. M.

Place: Amphidrome

President—A. W. Hornbogen, Marquette.
Secretary—F. C. Warnshuis, Grand Rapids.

1. Call to order by the President.
2. Invocation: Rev. Wm. Ried Cross.
3. Address of Welcome, Mayor I. I. Hartman.
4. Address of Welcome, P. D. Bourland, President, Houghton County Medical Society.
5. Response on behalf of the State Society, President, A. W. Hornbogen.
6. Response on behalf of the Profession of the Lower Peninsula, C. B. Burr, Flint.
7. Report of Committee on Arrangements, A. F. Fischer, Chairman.
8. Report of the House of Delegates, the Secretary.
9. Address, F. A. Jeffers, Painesdale.
10. Address, "Papal Physicians," V. Rev. Francis X. Barth.
11. President's Annual Address, A. W. Hornbogen, Marquette.
12. Miscellaneous Business: Under this order it will be opportune for any member to bring before the Society any subject of general interest, either by informal discussion or formal resolution.
13. Nominations for President for 1916-1917.
14. Adjournment.

SECOND GENERAL SESSION

Thursday, August 17th, 11:30 A. M.

1. Call to order.
2. Reading of Minutes.
3. Report of the House of Delegates.
4. Miscellaneous Business.
5. Announcement of the Result of the ballot for President.
6. Introduction and Installation of the President-elect.
7. Resolutions.
8. Adjournment **sine die.**

SECTIONAL MEETINGS

SECTION ON GENERAL MEDICINE

Chairman—**V. C. Vaughan, Jr., Detroit.**
Secretary—**H. M. Highfield, Riverdale.**

First Session, Wednesday Afternoon, August 16, 1:45 P. M.

(The Secretary of the Section will collect all papers as soon as they are read).

1. The Diagnosis of Pancreatic Lesions.
 Dr. A. M. Mortenson, Battle Creek.
2. Intestinal Toxemia.
 Dr. C. D. Aaron, Detroit.
3. Recent Developments in Epilepsy.
 Dr. C. A. L. Reed, Cincinnati.
 Discussion opened by Dr. A. W. Ives, Detroit.

Second Session, Thursday Morning, August 17, 9:00 A. M.

4. Peace and War in the Human Organism.
 Dr. F. McDee Harkin.
5. The Roentgen Examination of the Sella Turcica.
 Dr. P. M. Hickey, Detroit.
 Discussion opened by Dr. C. A. Crane, Kalamazoo
6. Age and Arterial Degeneration.
 Dr. B. A. Shepherd, Kalamazoo.
7. The Diagnosis and Treatment of Chronic Interstial Nephritis with Hypertension.
 Dr. L. W. Howe.
 Discussion opened by Dr. W. J. Wilson, Jr. Detroit

Third Session, Thursday Afternoon, August 17, 1:45 P. M.

8. Election of Chairman.
9. Symposium on Public Health and Tuberculosis.
 The Campaign Against Tuberculosis.
 Dr. W. DeKliene, Lansing.
 The Tuberculosis Problem.
 Dr. A. F. Fischer, Hancock.
 Etiology and Diagnosis of Enlarged Bronchial Glands in Infancy and Childhood.
 Dr. C. H. Johnston, Grand Rapids.
 The Treatment of Enlarged Bronchial Glands in Infancy and Childhood.
 Dr. H. M. Rich, Detroit.
 Discussion opened by C. G. Parnell, Jackson; J. S. Pritchard, Battle Creek.

SECTION ON SURGERY

First Session, Wednesday Afternoon, August 16th, 1:45 P. M.

Chairman—**Alex. McKenzie, Port Huron.**
Secretary—**A. W. Blain, Detroit.**
(Program in next issue.)

SECTION ON GYNECOLOGY AND OBSTETRICS

First Session, Wednesday, August 16th, 1:45 P. M.

Chairman—**C. E. Boys, Kalamazoo.**

Secretary—**Henry J. Vandenburg, Grand Rapids.**

1. Symposium on: "Gynecological Neurosis."
 (a) W. P. Manton, Detroit.
 (b) Reuben Peterson, Ann Arbor.
 (c) R. R. Smith, Grand Rapids.
 Discussion led by Dr. C. D. Camp, Ann Arbor.

Second Session, Thursday Morning, August 17th, 9:00 A. M.

2. Sarcomatous Degeneration of Uterine Fibroids.
 Dr. Frank C. Witter, Petoskey.
3. X-Ray Findings in Pelvic Conditions.
 Dr. James T. Case, Battle Creek.
4. Retroversion of Uterus and Its Correction.
 Dr. Edw. T. Abrams, Hancock.
5. End Results in 100 Round Ligament Operations.
 Dr. H. W. Hewitt, Detroit.

Third Session, Thursday Afternoon, August 17th, 1:45 A. M.

6. Election of Chairman.
7. Symposium on: The Hemorrhages of Pregnancy.
 (a) The First Half of Pregnancy.
 Leslie H. DeWitt, Kalamazoo.
 (b) The Latter Half of Pregnancy.
 Alexander M. Campbell, Grand Rapids.
 (c) Post Partum Hemorrhages.
 George L. LeFevre, Muskegon.

SECTION ON OPHTHALMOLOGY, OTOLARYNGOLOGY

Chairman—**Stanley G. Miner, Detroit.**

Secretary—**Wilfred Haughey, Battle Creek.**

First Session, Wednesday, August 16th, 1:45 P. M.

1. The Traumatic Transplantation of Cilia into the Anterior Chamber.
 Dr. Howell L. Begle, Detroit.
2. Bacteriology of Acute Ear Infections.
 Dr. Edward J. Bernstein, Kalamazoo.
3. Some Phases of the Anatomy of the Nose and Accessory Sinuses. Lantern Slide Demonstrations
 Dr. Hanau W. Loeb, St. Louis, Mo.
4. Removal of One Vocal Cord for Abductor Paralysis.
 Dr. Charles H. Baker, Bay City.

Second Session Thursday, August 17th, 9:00 A. M.

5. Report of Two Cases of Labyrinthitis Complicating Acute Suppurative Otitis Media.
 Dr. Don M. Campbell, Detroit.
6. Macroglossia Lymphangioma.
 Dr. Wilfrid Haughey, Battle Creek.

Third Session, Thursday, August 17th, 1:45 P. M.

7. Election of Chairman.
8. Syphilitic Iritis.
 Dr. Peter J. Livingstone, Detroit.
9. Antral Operations From the Standpoint of Oral Surgeons.
 Dr. Charles H. Oakman, D. D. S., Detroit.

PROGRAM OF THE COUNTY SECRETARIES' MEETING, TUESDAY EVENING, AUGUST 15

President—**F. C. Kinsey, Grand Rapids.**

Secretary—**Alex McKinney, Saginaw.**

PRESIDENT'S ADDRESS. (Five minutes).

"Some Secrets Told Through a Megaphone."
Dr. Frank Cameron Kinsey, Grand Rapids.

PHASES OF COUNTY SOCIETY WORK. (Strictly limited to three minutes).

"Getting Out a Good Attendance."
Dr. Leslie H. S. DeWitt, Kalamazoo.

"Problems of a County Society."
Dr. H. T. Carriel, Marquette.

"The Society Secretaryship: An Office Worth While."
Dr. A. R. McKinney, Saginaw.

"Attendance and Plans for Securing Same."
Dr. Otto L. Ricker, Cadillac.

"The Big Problem of the Small Society."
Dr. Wm. W. Arscott, Rogers City.

"Programs."
Dr. R. C. Winslow, Sault Ste. Marie.

"Financing a Medical Society."
Dr. Geo. E. Moore, Ironwood.

"The County Secretary as a Peacemaker."
Dr. J. L. Nitterbauer, Ontonagon.

"Social Affairs."
Dr. Geo. A. Conrad, Houghton.

ENTERTAINMENT FEATURES

TUESDAY EVENING, AUGUST 15: Amphidrome. Smoker and Buffet Luncheon with Entertainment.

WEDNESDAY EVENING, AUGUST 16: Masonic Temple. President's Reception, followed by a Smoker and Entertainment.

LADIES. This will be announced later.

Automobile Trips through the Copper Country and Mines will be arranged and every attendant will have an ample opportunity of visiting the many points of interest.

The Journal
OF THE
Michigan State Medical Society
ISSUED MONTHLY UNDER THE DIRECTION OF THE COUNCIL

Arthur M. Hume, Chairman Owosso.
Guy L. Kiefer Detroit.
W. J. Kay Lapeer.
W. J. DuBois Grand Rapids.

EDITOR
FREDERICK C. WARNSHUIS, M.D., F.A.C.S.
Grand Rapids, Mich.

All communications relative to exchanges, books for review, manuscripts, news, advertising, and subscriptions are to be addressed to Frederick C. Warnshuis, M. D., 91 Monroe Ave., Grand Rapids, Mich.

The Society does not hold itself responsible for opinions expressed in original papers, discussions, communications, or advertisements.

Subscription Price—$3.50 per year, in advance.

July.

Editorials

HEALTH INSURANCE.

This method of providing medical care to the wage earner is of special importance. The legislative session of 1917 doubtless will see a health insurance bill introduced as has already been done in Massachusetts, New York and New Jersey. Congress is appointing a commission to study the question, while California already has an official commission actively at work.

We are calling the attention of Michigan physicians to this important movement to stimulate intelligent discussion of the inherent problems and to institute a concerted course of action. In order that the scope and extent of the movement may become apparent we are publishing a Tentative Draft of a Proposed Act with such comment as has been made by the Committee on Social Insurance of the American Association for Labor Legislation.

NEED FOR HEALTH INSURANCE

The social aspects of sickness received comparatively scant attention until careful estimates revealed that 3,000,000 persons in the United States are sick at any one time, that each of our 30,000,000 wage-earners loses on an average approximately nine days from this cause yearly, that the cost of medical treatment is $180,000,000 annually, and that the resultant annual wage loss totals $500,000,000.

Wage studies show that the slender savings of workingmen are inadequate to meet the burden of sickness. One study has revealed that sickness is a very serious disabling condition in 75 per cent. of the families under the care of the New York Charity Organization Society, while the United States Immigration Commission of 1909 states that sickness was the apparent cause of poverty in 38 per cent. of the 31,481 charity cases studied. Until some means is devised to prevent illness, and to distribute its cost, sickness will continue to produce poverty and dependence.

Unfortunately, although much of it is preventable, there are no signs that sickness in America is diminishing. Instead, the deaths in middle life, due to degenerative diseases, have increased during the last twenty-three years in the United States by 40 per cent; whereas during the same period Prussia, under compulsory health insurance, has markedly improved its national vitality and increased the average span of life.

The responsibility of phosphorus, lead, and other industrial poisons for sickness is so easily demonstrable that in some states workmen's compensation now covers not only industrial accidents, but also definitely occupational diseases. The extension of such compensation would not, however, meet the whole need, because it would cover only a small portion of the sickness among the industrial population. Nevertheless, evidence is accumulating which shows the relation between dust, fatigue, insanitary conditions, and general ill-health. For each 100 men in the Leipzig fund engaged in the lime and cement industries, for example, there are sixty-five cases of sickness a year; whereas among office employees there are but twenty-one cases. Each cement and lime worker loses on an average 13.6 days a year because of sickness; the average office employee but 5.8 days. Evidently health is not solely due to individual habits, but is due in large measure to industrial occupation.

Already workmen have realized the acuteness of the sickness problem, and have begun to make collective provision on an insurance basis. A few trade unions offer sickness benefits, and various groups of workers have formed benefit societies. Employers, too, have recognized the need, and have begun to establish sick benefit funds for their workmen. These provisions, fragmentary as they are, show that both workmen and employers recognize the need for action, and that it is desirable to provide a com-

prehensive system of health insurance to embrace all wage-earners.

By properly distributing the cost between workmen, employers, and the state, the burden will be made lighter and economies can be effected which are impossible for the individual. Moreover, a comprehensive insurance system, desirable in itself, will stimulate, just as surely as workmen's compensation acts have done, efforts to minimize the cost by preventing sickness, and will thereby improve the health of the nation.

HEALTH INSURANCE STANDARDS

1. To be effective health insurance should be compulsory, on the basis of joint contributions of employer, employee and the state.
2. The compulsory insurance should include all wage workers earning less than a given annual sum, where employed with sufficient regularity to make it practicable to compute and collect assessments. Casual and home workers should, as far as practicable, be included within the plan and scope of a compulsory system.
3. There should be a voluntary supplementary system for groups of persons (wage workers or others) who for practical reasons are kept out of the compulsory system.
4. Health insurance should provide for a specified period only, provisionally set at twenty-six weeks (one-half year), but a system of invalidity insurance should be combined with health insurance so that all disability due to disease will be taken care of in one law, although the funds should be separate.
5. Health insurance on the compulsory plan should be carried by mutual local funds jointly managed by employers and employees under public supervision. In large cities such locals may be organized by trades with a federated bureau for the medical relief. Establishment funds and existing mutual sick funds may be permitted to carry the insurance where their existence does not injure the local funds, but they must be under strict government supervision.
6. Invalidity insurance should be carried by funds covering a larger geographical area comprising the districts of a number of local health insurance funds. The administration of the invalidity fund should be intimately associated with that of the local health funds and on a representative basis.
7. Both health and invalidity insurance should include medical service, supplies, necessary nursing and hospital care. Such provision should be thoroughly adequate, but its organization may be left to the local societies under strict governmental control.
8. Cash benefits should be provided by both invalidity and health insurance for the insured or his dependents during such disability.
9. It is highly desirable that prevention be emphasized so that the introduction of a compulsory health and invalidity insurance system shall lead to a campaign of health conservation similar to the safety movements resulting from workmen's compensation.

TENTATIVE DRAFT OF AN ACT

Submitted for criticism and discussion by the Committee on Social Insurance of the American Association for Labor Legislation.

The British title, "Health Insurance," is used instead of the German "Sickness Insurance," because it calls attention to the main object of the act, the conservation of health, that is, the prevention and treatment of sickness, as well as provision of financial benefits.

Section 1. TITLE. This chapter shall be known as the Health Insurance Act.

Section 2. DEFINITIONS. When used in this act:

"Commission" means the Social Insurance Commission;
"Fund" means a local or trade fund, as the case may be;
"Society" means an approved society;
"Carrier" means the society or fund which carries the insurance;
"Insurance" means health insurance under this act;
"Disability" means inability to pursue the usual gainful occupation.

PERSONS INSURED

The principle of compulsion has been adopted because authorities are pretty generally agreed that this is the only method to reach the poorest paid and the most improvident workers, who obviously most need the benefits offered by an insurance scheme. Thus in Great Britain, where voluntary sickness insurance had an exceptional development, only the better paid workers were insured, and it was found necessary in 1911 to enact a compulsory measure to give the whole population the necessary protection. In addition, compulsion to insure reduces the administrative expenses otherwise involved in canvassing for business; thus in Great Britain the administrative cost of the compulsory health insurance law is but 14 per cent. of the receipts, whereas the societies which collect from house to house small premiums for burial insurance spend 37 per cent. of their total income for management. Compulsory insurance, through the certainty that each fund will have a regular accession of young lives every year, allows the younger members who have overpaid in their youth to benefit in old age by the overpayments of the incoming generation, does no injustice to the individual worker, and therefore makes possible the avoidance of

the reserve fund of private insurance. These savings make it possible to offer larger benefits for the same contributions than would be possible under voluntary insurance.

Moreover, European experience is strongly in favor of compulsion, and in no country in which it has been introduced has it been subsequently abandoned. Even in the United States compulsion is not unknown, for compulsory hospital funds are very common in the mining regions and on railways, affecting thus the highest as well as some of the lowest paid labor in the country.

Employed persons only are included, except that medical attendance is to be given to the families. The wage-earner is usually the breadwinner of a family; his illness is normally an economic as well as a physical misfortune; his needs are therefore different from those of the classes not so directly dependent on health for their livelihood, or those of the non-wage-earning members of a family.

German and English precedents are followed by including under compulsory insurance all manual workers, whatever their earnings, and in limiting compulsory insurance for other employees, mostly clerks and foremen, to persons earning less than $1,200 a year. (Sec. 3.) The only exception to the general rule of compulsion is made for the case of home workers and casuals. Where a person works only occasionally, his contributions would be so few and scattered as not to form a proper basis for his benefits, and he will usually be dependent either on other members of his family, on other means, or on charity. Power should be vested in a public authority to make special provision for or to exempt any such cases from the insurance by a general regulation. (Sec. 4.) Following all European acts, provision is made for voluntary insurance of practically all working people not under compulsory insurance, and of small employers. It is particularly desirable that former employees who have been long insured should be enabled to continue their insurance. Voluntarily insured persons have the right to enter the compulsory mutual funds, and so to participate in their benefits and management. (Secs. 5, 35.)

Section 3. COMPULSORY INSURANCE. Every person employed in the state at manual labor under any form of wage contract, unless exempted under Section 4 of this act, and every other employee whose remuneration does not exceed $100 a month, shall be insured in a fund or society, except employees of the United States and except employees of the state or of municipalities for whom provision in time of sickness is already made through legally authorized means which in the opinion of the Commission are satisfactory.

Section 4. HOME WORKERS AND CASUAL EMPLOYEES. Special regulations shall be made by the Social Insurance Commission for the insurance of home workers and casual employees, or for their exemption from compulsory insurance.

Section 5. VOLUNTARY INSURANCE.

Self-employed persons whose earnings do not exceed $100 a month on an average;

Persons formerly compulsory insured who, within one year from the date on which they cease to be insured, apply for voluntary insurance;

Members of the family of the employer who work in his establishment without wages, may insure themselves voluntarily in the local or trade funds of the locality in which they live and of the trade at which they are employed, subject to conditions of this act.

BENEFITS

When the breadwinner of a family falls ill, he needs not only medical care, but also, usually, a sufficient cash benefit to insure the support of himself and of his dependents. It is essential that the two benefits be associated in the same organization, both for economy and convenience of administration, and also to meet effectively the abuse of malingering. The public interest in the insurance, the improvement of the health of a large and peculiarly threatened class of the community, can only be adequately met by the provision for medical attendance. The same public interest demands the extension of this benefit to the dependent members of the families of the insured, provided for in American hospital funds and in German sick insurance organizations. The state's subsidy is designed in part to cover the expense of this extension which would not constitute a large percentage of the total cost. (Secs. 6-17.)

Proper provision for medical care is one of the most important problems in the efficient administration of health insurance. The tentative plan—many of the details of which should be left to regulations to be made by the Commission and the medical advisory board—allows each fund or approved society to select the method of administration suitable to local conditions. Where the fund chooses the panel system, any legally qualified physician may join the panel, and the insured workmen shall have free choice among physicians undertaking insurance practice. Since this system may not prove practicable in all districts, freedom should be left to the funds to provide medical care through other methods, such as salaried physicians, among whom there should be reasonable

free choice, through physicians responsible for specified districts, or through any other method approved by the Commission. (Secs. 9-11.)

To avoid some of the recognized shortcomings of foreign systems, certain safeguards have been inserted. For instance, the limitation placed upon the number of insured patients whom a physician may treat will go far toward preventing a repetition of the British experience whereby, under a system of free choice of physician, one-fifth of the doctors are, in many towns, treating one-half the insured population. Moreover, since this limitation is calculated with reference to the probable number of sick days which a doctor is likely to have in charge, it will prevent extreme cases of overwork caused by too large numbers of insured patients. In the interests of patients, doctors, and funds alike, it is highly desirable to separate the duty of certifying a person as eligible for cash benefit from that of treating him, and for this and for supervisory purposes a fund may employ a medical officer. (Sec. 11.)

The question of method of payment to physicians is an especially complex one on which the committee has not reached definite conclusions, although it offers the following points for discussion:

The capitation payment, of so much per person per year, common now in lodge practice, has in it elements which bring about an undue amount of work, and in turn forces neglectful, hurried service to the patients. Another plan is that of engaging a salaried physician, similar to the arrangements now made by many railroads. Since no fund could employ many physicians, the limited choice of doctor might be unfavorably regarded by some of the insured persons. The advocates of this system claim that it offers peculiar advantages of selecting the physicians most desirable for this work, and thus of obtaining better service. A third method, payment per visit, is also possible. To the medical profession this method may be preferable because it establishes a quantitative relation between services and remuneration, and to the patient because it probably secures more careful attention from the doctor and thus eliminates the chief fault of the capitation system. On the other hand, medical care under this system may put a heavier burden upon the funds administering benefits. A compromise between this and capitation may be made by which a total sum, calculated on the per capita basis, is distributed among physicians in accordance with the services rendered by each. Instead of the elaborate fee schedule common under workmen's compensation, a more simple arrangement is made whereby a physician is paid pro rata for office and house visits. Although this effectively meets the chief objection to a capitation payment, it may be undesirable to the physician since the actual payment for each visit may decrease in proportion as work increases. However, the provision of a fixed amount divided according to services has administrative advantages since the total amount paid for medical aid is a fairly constant charge upon each fund.

But whichever system be adopted, one thing is clear: all medical service to the insured will be paid for, including the unremunerated dispensary practice of to-day. The problem becomes one of deciding which method of arranging for the 100 per cent. collections of the future is preferable, in the interests alike of patients, doctors, and administrators.

Representation of the medical point of view in the administration is important. The need is met by the presence of a doctor on the Social Insurance Commission and by provision for consultation with representatives of the medical profession on medical matters. This secures a hearing to the medical point of view on both state and local problems.

The necessary supervision may be obtained through medical officers employed by the funds, while matters in dispute may be referred to special committees, both state and local. To these committees, representing the various interests, power might well be given to remove undesirable practitioners from insurance practice, subject to an appeal to the Commission.

Provision for maternity benefit is included, since childbirth may be assimilated with sickness in its physical and economic effects, and since the interest of the public in better care of mothers is clear. The prohibition placed in some states upon the industrial employment of women just before or after childbirth, in addition to the financial loss involved in her absence from work emphasizes the desirability of providing a cash benefit during her inability to work just as cash benefit is provided for incapacity for other causes. Moreover the annual occurrence in the registration area of 10,000 deaths of mothers from causes connected with childbirth and of 52,000 deaths of infants from diseases of early infancy—many of which are preventable—make it imperative to provide more adequate care. The importance of this provision is reflected in the fact that maternity

benefits are universally included in European systems. Provision for maternity benefit has always been a feature of the model Health Insurance bill. In an effort to meet objections from one source, however, this feature was left out of the bills as introduced in 1916. This omission led to much adverse criticism. (Sec. 18.)

Funeral benefits are the most urgently felt insurance need of the classes subject to this act. They are included in most compulsory foreign systems, and are provided for in most systems existing in America. As one of the benefits under sickness insurance, their cost would be very small in proportion to what it is at present, and also in proportion to the total amount of benefits. The present great cost of premium collection for burial insurance will be done away with and the added cost of administration of the system will be negligible, while the relief afforded to the poorer classes of working people, in comparison to the heavy cost of securing burial insurance at present, will go far towards paying their share of the contributions for all benefits. (Sec. 19.)

Section 6. CASES IN WHICH PAID. Insured members shall receive benefits in case of any sickness or accident or for death, not covered by workmen's compensation.

Section 7. MINIMUM BENEFITS. Every carrier must provide for its insured members as minimum benefits:

Medical, surgical and nursing attendance;
Medicines and surgical supplies;
Cash benefits;
Maternity benefits;
Funeral benefit;
Medical and surgical attendance and medicines for dependent members of their families.

Section 8. BEGINNING OF RIGHT. Insurance, with the exception of maternity benefits, begins with the day of membership. The maternity benefits shall be payable to any woman insured against sickness for at least six months during the year preceding the confinement, or to the wife or widow of any man so insured.

Section 9. MEDICAL, SURGICAL AND NURSING ATTENDANCE. All necessary medical, surgical and nursing attendance and treatment shall be furnished by the carrier from the first day of sickness during the continuance of sickness but not to exceed twenty-six weeks of disability in any consecutive twelve months. In case the carrier is unable to furnish the benefit provided for in this section, it must pay the cost of such service actually rendered by competent persons at a rate approved by the Commission.

Section 10. MEDICAL SERVICE. The carriers, subject to the approval of the Commission, shall make arrangements for medical, surgical, and nursing aid by legally qualified physicians and surgeons, and by nurses or through institutions or associations of physicians, surgeons, and nurses. Provision for medical aid shall be made by the carriers by means of either:

1. A panel of physicians to which all legally qualified physicians shall have the right to belong, and from among whom the patients shall have free choice of physician, subject to the physician's right to refuse patients on grounds specified in regulations made under this act; provided, however, that no physician on the panel shall have on his list of insured patients more than 500 insured families nor more than 1,000 insured individuals;
2. Salaried physicians in the employ of the carriers among which physicians the insured persons shall have reasonable free choice;
3. District medical officers, engaged for the treatment of insured persons in prescribed areas:
4. Combination of above methods.

Section 11. MEDICAL OFFICERS. Each carrier shall employ medical officers to examine patients who claim cash benefit, to provide a certificate of disability, and to supervise the character of the medical service in the interests of insured patients, physicians, and carriers.

Section 12. MEDICAL AND SURGICAL SUPPLIES. Insured persons shall be supplied with all necessary medicines, surgical supplies, dressings, eyeglasses, trusses, crutches and similar appliances prescribed by the physician, not to exceed $50 in cost in any one year.

Section 13. HOSPITAL TREATMENT. Hospital or sanatorium treatment and maintenance shall be furnished, upon the approval of the medical officer of the carrier, instead of all other benefits (except as provided in Section 16), with the consent of the insured member, or that of his family when it is not practicable to obtain his consent. The carrier may demand that such treatment and maintenance be accepted when required by the contagious nature of the disease, or when in the opinion of its medical officer such hospital treatment is imperative for the proper treatment of the disease or for the proper control of the patient. Cash benefit may be discontinued during refusal to submit to hospital treatment. Hospital treatment shall be furnished for the same period as cash benefit. This benefit may be provided in those hospitals with which the funds and societies have made satisfactory financial arrangements which have met the approval of the Social Insurance Commissioners, or in hospitals erected and maintained by the funds and societies with the approval of the Commission.

Section 14. ARBITRATION COMMITTEE. All disputes between the insured and physicians, or between funds and physicians concerning medical benefits shall be referred to special committees composed of representatives of the interests concerned with an impartial chairman appointed by the Commission, with an appeal to the Commission.

Section 15. CASH BENEFIT. A cash benefit shall be paid beginning with the fourth day of disability on account of illness; it shall equal two-thirds (66⅔ per cent.) of the weekly wages of the insured member. It shall be paid only during con-

tinuance of disability, and shall not be paid to the same person for a period of over twenty-six weeks in any consecutive twelve months.

Section 16. CASH BENEFIT TO DEPENDENTS. A cash benefit equal to one-third of the wages of an insured member receiving hospital treatment shall be paid to his family or other dependents while he is in the hospital.

Section 17. PERIODS OF PAYMENT. Cash benefits shall be paid weekly where possible, and in no case less frequently than semi-monthly.

Section 18. MATERNITY BENEFITS. Maternity benefits shall consist of:

All necessary medical, surgical and obstetrical aid, materials and appliances, which shall be given insured women and wives of insured men;

A weekly maternity benefit, payable to insured women, equal to the regular sick benefit of the insured, for a period of eight weeks, of which at least six shall be subsequent to delivery, on condition that the beneficiary abstain from gainful employment during period of payment.

Section 19. FUNERAL BENEFIT. The carrier shall pay the actual expenses of the funeral of a deceased insured member, as arranged for by the family or next of kin, or in absence of such by the officers of the fund, up to the amount of $50. The funeral benefit shall be paid in case of death of a former member while in receipt of cash benefits, or death within six months after discontinuance of cash benefits because of the exhaustion of the time limit, provided he has not, within those six months, returned to work.

Section 20. ADDITIONAL BENEFITS. The carriers may grant additional or increased benefits, with the consent of the Commission.

Section 21. EXTENSION OF INSURANCE. When contributions cease on account of unemployment not due to sickness, the insurance shall continue in force for one week for each four weeks of paid up membership during the preceding twenty-six weeks.

CONTRIBUTIONS.

If a mutual organization of employers and employees is to manage the insurance under the supervision of the state, it is important that the two elements should feel a concern in keeping down the sickness rate and in preventing malingering. The most effective way of securing this result is to divide the pecuniary burden and thus make any increase in cost immediately felt by all parties concerned, so that the representatives of the various interests on the governing boards of the mutuals would be required to show reasons for and results from their expenditures. The influence of the employees as recipients of benefits, and state supervision, will prevent undue decrease of benefits, while the interest of employees both as contributors and as recipients of benefits, joined to the interest of employers as contributors, will tend to prevent extravagance and fraud. The contribution of the state will not only justify state regulation, but will interest the public at large and state departments in the promotion of the public health.

If employers and employees are to have an equal share in the administration of the mutual funds, their contributions should be equal. The share of the state, one-fifth, is enough to interest the public in the results of the insurance, while it is not so large a share of the actual cost that its temporary withdrawal by an economical legislature or executive would fatally cripple the insurance fund. (Sec. 22.)

More weighty than the argument of expediency is that of justice. The state now recognizes its duty as a guardian of the health of those of its people less able to care for themselves, by factory and housing laws, by free hospitals and dispensaries supported by municipalities and resorted to by a large and ever-growing proportion of the poorer classes; the common danger from communicable diseases has made increasingly clear the benefit to all from a broad and effective health campaign. Why should not the general public, through the state, contribute to what has proved in other countries the most powerful agency for sickness prevention, Health Insurance?

The share of industry in causing sickness is well recognized. Not only the more clearly defined industrial diseases like lead poisoning and caisson sickness, but also general diseases, tuberculosis, anemia, digestive and nervous disorders, are partly or wholly caused by dust, speeding up, monotony, long hours, or other conditions associated with modern business. Aside, therefore, from the advantage of interesting the employer financially in decreasing sickness by improving working and living conditions, and from his gain by a healthier working force, there is ample justification in requiring industry as such to contribute to the insurance. (Secs. 22-24.)

No new burden will be imposed on the employees. Investigators for the United States Bureau of Labor Statistics and for private institutions agree that at least 4 per cent. of the income of working class families goes for care of sickness or for burial insurance. Based on German experience, as noted hereafter, this would be about the total amount required for all the benefits in this draft, and would be divided among employer, worker and state, so

that the results of the insurance would be an actual lowering of the item of cost of sickness and burial in the family budget. Moreover, the benefits obtainable in such a subsidized system are greater than those which the workers' unaided contributions could purchase.

On the assumption that 4 per cent. of the wages will be required for the benefits provided in this draft, about what the German experience shows would be necessary, the total contributions for a man earning $600 would be $24 a year, or $2 a month. He would pay 80 cents a month, the employer 80 cents, the state 40 cents. Most mine hospital funds charge the employee $1 a month for medical attendance for sickness and trade accidents alone, usually including his family. (Secs. 23, 24.)

The plan of decreasing the employee's contribution as his wages decrease is adopted from the British act. The argument that his contribution would be no new burden on the individual employee loses force as wages approach the bare subsistence level, and it is therefore only reasonable that the industries which pay extremely low wages should bear an increasing share of the burden of sickness which often results directly from insufficient nourishment or poor housing. Section 22 will decrease the employees' contribution, normally 50 per cent. of the joint contribution of employer and employee, by 10 per cent. for each decrease in earnings of $1 a week below $9.

If the insurance rate for each industry is not to be based on individual examination of employees, clearly impossible in a large compulsory system, there are three elements which would fix the cost of health insurance. One is age, a second the character of work, and a third, locality. This last element need not be considered in a local mutual plan. The first may be disregarded, since the constant influx of young lives will counterbalance those growing older, and, as the insured must go in when young and continue in the insurance, normally, until he is old, his own overpayments in youth will counterbalance his underpayments later in life (only instead of building up the individual reserve fund necessary in private voluntary insurance, his overpayments will be used to balance underpayments for some older man, and in turn another younger man's surplus will care for his advancing age). The second element is provided for in the draft by allowing the insurance rates for different industries to vary with the sickness ratio in each, and it may be well to go a step further and increase contributions paid by the employer in particular establishments which show a worse sickness ratio than others in the same industry. Where there are special funds for a particular industry, the question of rates takes care of itself; where several industries are associated in a local mutual, the governing board of a mutual, under the supervision of the state, may fix different rates for the different industries.

Section 22. DIVISION OF EXPENSES. The expenses of the funds shall be met by contributions from employees, employers and the state. The state shall contribute one-fifth of the total expenditures for benefits, subject to the provisions of Section 42; one-half of the balance shall be paid by the employer, one-half by the employee, except that if the earnings of the insured fall below $9 a week, the shares of the employer, employee and state shall be the proportion indicated in the following schedule:

If earnings are under	But not under	Employer	Employee	State
$9	$8	48%	32%	20%
8	7	56%	24%	20%
7	6	64%	16%	20%
6	5	72%	8%	20%
5		80%	0%	20%

In all cases the contributions shall be computed as a percentage of wages.

Section 23. AMOUNT OF CONTRIBUTIONS. The amount of the contributions shall be computed so as to be sufficient for the payment of benefits and the expenses of administration of the funds and necessary reserve and guarantee funds.

Section 24. RATES OF CONTRIBUTIONS. In funds in which employees in several industries are insured, the percentage rates of contribution may be different for different industries, according to the sickness experience.

(To be continued)

TUBERCULOSIS FROM THE VIEWPOINT OF PREVENTION.

Tuberculosis is only one of the many communicable diseases. The principles that govern the methods employed in the prevention of these diseases are the same for tuberculosis as for all others. While the application of the methods may vary with each one, nevertheless, the principles of prevention are uniform.

Like all other communicable diseases, tuberculosis spreads largely through direct contact. If we could isolate the dangerous cases entirely from the rest of society, the problem would be simplified very much. But the question of isolation in tuberculosis is a very difficult one as compared with that of the other preventable diseases. People who are afflicted with moderately advanced or advanced pulmonary tuberculosis would perhaps have to be isolated for

the rest of their natural lives, if we would be sure that they will never again be a danger to others. A short stay of a few months in a sanitorium does not necessarily make an open case a closed one, either temporarily or permanently. It may or it may not. We would never be certain that they would remain harmless, even after an apparent cure. Permanent and complete isolation is almost out of the question, unless we could establish colonies where the open cases could be isolated until death.

On the other hand, most of the incipient cases are not a danger to others and therefore do not require isolation. But they require attention, nevertheless, if we hope to keep them from becoming dangerous. If they are not treated, they may become open cases. They must be educated in the most modern way of treatment and it must be done either in the sanatorium or in the home. Therefore, the treatment of the early cases becomes part of the preventive work necessary, and the treatment consists almost entirely in teaching them how to live.

It would be utterly impossible to treat every case in a sanatorium. Think of treating the 20,000 to 25,000 tuberculous people in Michigan in sanatoria. It would bankrupt the state. By far the largest proportion of them, therefore, must be treated in the home through education by the physician, the nurse, literature, and all other methods at our command.

Sanatoria, preventoria, fresh air schools, and all the other recognized factors now employed for isolation and treatment, although they are extremely important, cannot fill every need. There are other factors that must be born in mind and which must be treated if we hope to eradicate tuberculosis. Poverty, over-crowding, bad housing, unfavorable industrial conditions, alcoholism, the question of tuberculous milk, etc. must all be rectified. It is important to remove the open cases from the home, to isolate and to treat them. It is important to treat the incipient cases in sanatoria or in the home, and educate them. But it is equally important that we do not allow the treated cases to return to, or the untreated masses to live in, their crowded and insanitary homes and work shops. We must not allow them to live in poverty and filth so that they will be deprived of plenty of fresh air and good food and clean surroundings. Living conditions in the home, customs and habits, ignorance and vice, the food supply, especially tuberculous milk, are responsible for a certain amount of tuberculosis. We must improve all these living conditions and we must insure a clean food supply if we hope to be successful.

The tuberculosis problem is not entirely a scientific problem, viewed from the standpoint of scientific medicine. In a much broader problem. It includes a study of social questions and their relation to disease, as well as a study of the application of the strictly scientific principles. It requires a broad knowledge of the working and the application of all the useful social activities that make for a better people as well as a healthier people.

But most important of all, we need health organization and trained health officials. We can never hope to do scientific and efficient work in the field of tuberculosis, or public health in general, unless the work is placed in the hands of trained individuals. We should organize and place competent men and women in charge, before we should proceed to do things. If we were to start in the business of manufacturing a commercial product with the expectation of making a handsome profit, we could see the sense of organizing and placing the work in the hands of individuals who are qualified. Prevention of disease is an economic problem and a business proposition. If we expect the business to bring results, we must organize on a business basis. The work must be taken out of the hands of charity and incompetence and undertaken and financed by government, through trained health departments.

We build sanatoria and place them in the control, very frequently, of those who know nothing about the running of such places. We start movements for various activities in health work, but we never give the handling of the problem a thought. We seem to feel satisfied if the work is started, regardless of control and supervision. The work will surely degenerate unless it is guided properly. Sanatoria frequently become nothing but high class boarding houses, unless they are under the supervision of responsible and trained people.

We need health organization first of all. We need more trained health officials in the medical profession, who can take charge and who will make themselves responsible for working out the details of a very complicated problem. With the right man in charge, we need not worry about the success of a community's health problems.

We can only hope to get organization through the revision of the health laws of our national, state, and local governments. Michigan needs a state law which will create efficient health supervision for every community. That, I believe,

is the first and most important step necessary in the work of eradicating tuberculosis, as well as other preventable disease.

William DeKleine, Lansing.

DETROIT MEETING, A. M. A.

The sixty-seventh annual meeting of the American Medical Association was successfully held in Detroit during the week of June 12. With 1196 Michigan physicians registered, as gleaned from the lists published in the Daily Bulletin, it becomes hardly necessary to enter into any extended description of the activities and transactions that were participated in.

The excellent and commendable manner in which the Committee on Arrangements carried out their work and the energy that they expended in providing for the requirements of such a meeting and the comfort of their guests was universally appreciated. The members of the Detroit profession are deserving of unstinted praise and thanks.

The activity that has been engaged in by our parent organization during the year just closed was clearly demonstrated in the reports of the several Councils and Committees that were rendered to the House of Delegates. These reports are too voluminous for us to reprint; we urge that every member read them as they are published in the minutes of the House of Delegates in the June 17th issue of the *Journal of the A.M.A.* By doing so one will be able to glean a new insight upon what the national association is doing for the betterment of the physician as well as for the public at large.

Dr. Charles Mayo was elected president-elect and New York City was selected as the place for holding the 1917 meeting. The House of Delegates also elected a Speaker whose duty it will be to preside over the deliberations of that body while it is in session.

SPECIAL TRAIN.

The members are again reminded that if a sufficient number of reservations are made a Special Train will be arranged for the Houghton Meeting. This train to leave Detroit on the evening of August 14th at about 7 p. m., Grand Rapids at 11:30 p. m. It will reach Houghton on the 15th at about 2 p. m. Those desiring to travel on this train will please make their reservations before July 25. Address the State Secretary, 91 Monroe Avenue, Grand Rapids, for reservations.

Editorial Comments

The increasing cost of paper has made the use of envelope wrappers for mailing *The Journal* prohibitive. Much against our wishes we have been compelled to return to the use of wrappers. Were we to continue the use of envelopes their cost for mailing one issue would reach $26.00. While on this subject we might mention that our printer lost $46.00 on our June issue, increased cost of paper, labor, ink and supplies being responsible. Our contract, however, protects us but on its expiration in October we may confidently expect to pay a higher price for the publication of the *Journal.* Then it will become imperative to either reduce its size or raise the subscription price.

Of course you are going to Houghton August 15th, 16th and 17th. You cannot afford to permit yourself foregoing this opportunity.

The doctor who supplies Insurance Companies with the data of a physical examination when filling out the certificates without charge for patients who are injured or ill is cheating himself. If you but assert your right you will secure a fee of $1.00 for this work. Why submit to being further imposed upon by supplying information that is valuable and necessary to insurance companies without charging for your services? We know of several who are being paid and you can receive a similar fee if you but insist upon it.

We requested, a few months ago, that our members submit suggestions for programs for summer meetings of our County Soeieties and offered prizes of text books for the three best suggestions. We received *one suggestion.* Rather a vivid comment upon our members spirit of co-operation. You, reader, eontributed to that spirit of disinterestedness because you failed to show a willingness to boost or help along. Can you blame us for wondering whether it is worth the while to expend time and energy in endeavoring to create and maintain an active medical organization in our state?

THE HOUGHTON MEETING.

In this issue the reader will find an illustrative and word deseription of the city of Houghton and its surrounding Copper Region. There is also imparted additional information regarding the arrangements that are being perfected for the holding of the Fifty-first Annual

Meeting of our State Society. Throughout the article there prevails a spirit of hospitableness that bids every member welcome and likewise there is implied the assurance that the profession of the Upper Peninsula will permit nothing to occur while you are sojourning among them to mar your pleasures or detract from the profitableness of the scientific session.

We are firm in the opinion that no more hearty invitation has ever been extended to the members of our State Society by any local group of members. We would indeed be discourteous and unmindful of our duties should we let a mere matter of a few miles in distance serve to dissuade one from accepting this invitation and forego participating in the activities of this meeting. Sure, we are going and in goodly numbers.

In addition to the hospitalities and pleasures that we look forward to there is another feature that exists and which will deliver to each attendant a large degree of personal benefit and professional efficiency. The Chairman and Secretaries of the four sections have been devoting a large amount of their time in perfecting and arranging the scientific papers for their section program. They have indeed prepared a truly good program and all the papers are bound to impart instructive comments upon the progress that is being made in the medical world.

We might continue and point out the asset of each paper but to do so would be imparting information that is intended for the member's profit while in attendance. We do assure you that if you desire to be abreast with the work of the men who are doing things in Michigan you cannot and should not neglect to arrange your plans so as to be in Houghton August 15,

May it never be said that the members of the Lower Peninsula were unmindful of their duty to the Upper Peninsula fellows or that we ignored their hearty invitations. Likewise let us demonstrate that the mere matter of a few miles cannot detract from our loyalty to our State Society. You members of Detroit, Ann Arbor, Jackson, Pontiac, Flint, Saginaw, Bay City, Niles, Benton Harbor and from the Southern tier of the state—you who have done so much for the success of our Society—may you hear the call, accept the invitation, and grasp the opportunity of making our Fifty-first Annual Meeting equally successful to any that we have had in the past.

Do not forget or neglect to make your reservations for berth on the Special Train to Houghton. Better write today.

THURSDAY, AUGUST TENTH: Tuberculosis Day for Michigan. You are urged to render your assistance in the endeavor to make this day result in the dissemination of information that will tend to rid Michigan of the presence of this White Plague.

This issue contains but the preliminary program of the Fifty-first Annual Meeting of our Society at Houghton on August 15, 16 and 17. It is urged and expected that a goodly number of our members will endeavor to be present. Make your arrangements now to not only attend this meeting but also to accept the hospitality of the profession of the Copper Country.

Deaths

The Detroit Academy of Medicine mourns the death of Doctor W. J. Wilson of this city. His life has been a long and active one. He was busy with his practice when he was suddenly summoned Home.

Doctor Wilson was a most active and loyal Fellow of the Detroit Academy of Medicine for many years, giving the best of himself toward that body. He together with five or six other men kept this Society alive during the period of its greatest need. He was a gentleman with fine judgment and ability, willingly and cheerfully answering the demands of his calling. He was a tireless worker, dearly loved by his patients and his friends for his knowledge and his big, kind heart.

Doctor Wilson was an Elder for many years in the First United Presbyterian Church of Detroit. He gave freely of his time and help.

He will be missed socially and professionally by those of us who knew and loved him. The Detroit Academy of Medicine here extends to Mrs. Wilson and her family its sincere sympathy and assures them of its sense of a personal loss in the death of Doctor Wilson.

Nathan Jenks was 44, a son of Detroit, Dartmouth and Cornell. He had a social tact and professional skill which made him highly successful in his chosen line of work. He went in and out among us in a happy, genial way which won him many friends, but for nothing, probably, shall we remember him with greater admiration than for the heroic way in which he faced the inevitable outcome of disease. Knowing too well the fate just ahead, he never faltered and was busy just as long as physical

strength permitted and cheerful with it all, even to the last. No cry escaped him, he never knew the coward's cringe. How fine a thing is to busied to the last and then go hence.

We will not mourn this Fellow of the Academy, for his life of late has said to us:

"Twilight and evening bell,
And after that the dark.
And may there be no sadness of farewell
When I embark."

And in these last few days, he has taught us the lesson of real bravery,

"Like one who wraps the drapery of his couch
About him and lies down to pleasant dreams."

Dr. Mary Elizabeth Newcomb-Law, a graduate of U. of M.,'90 died at her home in Windsor, Colo., February 9, 1916.

Dr Newcomb-Law was born in Blissfield, Mich., where her father was a physician for many years. After completing her medical course, she practiced in Bay City for a time, later she went east, where she held the position of physician to the Tewksbury Alms House, until she took up private practice in Lowell, Mass. She returned to Blissfield on account of the failing health of her mother, and there she continued her practice until her mother's death in 1912. She was married to John E. Law, of Windsor, Colo., in 1913 and went directly to the home.

In April, 1915 she suffered a stroke of apoplexy, never recovering from the resulting paralysis.

Dr. Wm. Morris of Gagetown died at his home following a three days illness of septic pleuro pneumonia. News of his death was received with a feeling of personal loss by many, not only in Gagetown and vicinity, but throughout the country. His professional, social and political activities had made him widely known and popular.

Dr. Nathan Jenks of Detroit died in Harper Hospital following an operation performed three weeks prior to his death. He was widely known in medical circles for his expert knowledge in obstetrics.

Dr. W. J. Wilson, Sr. of Detroit was a street car victim. Dr. Wilson was riding a motorcycle when he was struck by a street car. He was rushed to the hospital in a police ambulance but did not regain consciousness, death occurring two hours later after he arrived at the institution. His skull was fractured and he was internally injured. Dr. Wilson had practiced in Detroit for thirty-seven years and was highly respected by all who knew him.

Dr. A. T. Bodie of Bellaire died June 3. His body was found near the roadside a few miles from Bellaire. He had started out to make a call when, it is supposed, something went wrong with his auto and he started to make his way by foot and was overtaken with an attack of apoplexy. Dr. Bodie was about sixty years old and has been practicing medicine in this vicinity for about thirty years.

Dr. W. H. Bills of Allegan died June 10. He was one of the most widely known residents of Allegan county in which he resided more than forty years. Dr. Bills was prominent in public affairs. He had charge of the Humane Society in that vicinity and was also a member of the Library Board. At the time of his death he was physician for the Pere Marquette Railroad Company. He was a speaker of more than ordinary ability and gave many dedicatory addresses there and elsewhere.

State News Notes

WARNING.

We are advised that a very clever swindle is being worked by a young man calling on physicians in various sections of the country. He is fraudulently soliciting orders and collecting money for subscriptions to medical journals and for medical books published by various firms. He usually represents himself as a student, working his way through college and trying to get a number of votes to help him win a certain contest. He sometimes uses the names of L. D. Grant, H. D. Peters, R. A. Douglas and F. C. Schneider and he usually gives a receipt bearing the heading of some Society or Association, such as United Students Aid Society; the Alumni Educational League; the American Association for Education, etc.

The description given of this swindler is—young man of the Jewish type, rather slender, with very dark hair combed straight back and shows his teeth plainly when talking.

The whole scheme is a fraud. The societies mentioned do not exist. The idea is to collect money by offering special discounts and prices on medical books and journals and skip with the money.

This young man does not represent W. B. Saunders Company, whose name he frequently uses. He is a fraudulent subscription agent and physicians, generally, should be on the lookout for him.

Mrs. W. A. Foote, widow of the founder of the Commonwealth Power company, presented to Jackson, through the city commissioners a $30,000 site

for Jackson's new $150,000 city hospital, as a memorial to her late husband. Mrs. Foote purchased for the sum named "Homewild" a magnificent estate, long the home of the family of the late Hon. P. B. Loomis, a pioneer banker and railroad builder. This property Mrs. Foote gives to the city, without any conditions whatsoever.

A conference was held in Detroit during the fore part of June between representatives of the University of Michigan and the Detroit College of Medicine and Surgery. It is reported that the conference resulted in creating a larger sentiment than has ever existed before in favor of adopting some plan whereby the Junior and Senior students of the Medical Department of the University might avail themselves of the clinical teaching facilities that Detroit affords. A tentative plan was also presented for the organization of a Post-Graduate School. It is believed by some that these proposed innovations will now be realized.

On the Monday preceding the first session of the American Medical Association held in Detroit there was duly organized the American Association of Industrial Physicians and Surgeons. The object of this organization is to provide an avenue for the presentation of papers and discussions relating to the problems involved in this special practice. Dr. Harry Mock, of Chicago, was elected Secretary.

Dr. John B. Jackson of Kalamazoo announces that he is limiting his practice to internal medicine and anesthesia. He has removed his office to the offices of Dr. A. W. Crane, 420 S. Rose St. This change is made in contemplation of an association with Dr. Crane in a diagnostic and consultation practice.

The Medical Library Association held its Nineteenth Annual Meeting in Detroit on June 12th. On Tuesday June 13th the members visited Ann Arbor and visited the University Library. At this latter session Dr. A. S. Warthin read a paper on "The Medical Library." The paper will appear in a subsequent issue of *The Journal.*

Dr. G. A. Trueman, of Munising, mayor of the city, is suing the Ford Motor company and the W. K. Pruden Wheel company, of Lansing, for $100,000 damages because of the permanent injuries he asserts he suffered when a wheel on his Ford car collapsed on the Munising-Chatham road Nov. 2, 1914. Dr. Trueman sustained severe injuries of the head, and it was not believed he would survive. He was taken to Chicago for treatment.

Dr. J. C. Martin has been reappointed health officer of Highland Park at a salary of $2,500 a year. The bacteriological tests have proved to be more costly when made in Detroit than when made in Highland Park. A resolution has been passed authorizing the employment of a sanitary engineer at a salary of $1,700 a year, to make the tests and work with Dr. Martin in the health department.

The Committee on Arrangements for the Houghton meeting has planned some very attractive entertainment features for the Annual Meeting. We assure every member that the members of the profession in Houghton country have a reputation as being "a very charming and entertaining host."

Dr. A. M. Hume, Chief Surgeon of the Ann Arbor Railroad, announces that he has arranged for a meeting of the local surgeons of his road to be held on board one of the Company's boats while enroute to the State Meeting at Houghton.

Our members are reminded that it is essential that they renew their license for dispensing and prescribing opium or its derivatives under the Harrison act. The renewal date is July 1st of each year and the renewel fee is $1.00.

Sleeper and Special Train reservations for all members desiring to attend the state meeting at Houghton should be mailed promptly so that the necessary arrangements may be completed.

The staff of Harper Hospital, Detroit, conducted a series of Clinics on the Saturday of the week during which the A. M. A. convened.

Dr. A. C. McCurdy announces the removal of his offices from 30 West Main Street, Butcher building, to Suite 605, 606 and 607 new City Bank building, Battle Creek, Mich.

The Battle Creek Sanitarium, acting as host, entertained many physicians, from all over the country, previous to and following the meeting of the A.M.A.

The Battle Creek Sanitarium graduated a class of fifty-nine nurses on June 7th.

Dr. A. J. Carlson has been appointed full time health officer of Escanaba.

County Society News

GRATIOT-ISABELLA-CLARE COUNTY

The April meeting of the Gratiot-Isabella-Clare County branch of the Michigan State Medical Society met in the Supervisor's room of the Court House in Ithaca April 20, 1916. President I. N.

Brainard presiding called the meeting to order at 1:30 p. m. In the absence of Secretary, E. M. Highfield, whom the members regretted to learn was suffering from diphtheria, the minutes of the last meeting were not read. By motion Dr. Gardner was made Secretary pro tem. The usual order of business was dispensed with and Dr. C. G. Jennings proceeded to read his paper on "Therapeutics of Diabetics." Among other things the doctor said diabetics is a functional disturbance of metabolism not an organic disease. The two conditions which kill diabetics are infection of acidosis. Regarding acidosis, 30 grams of acid sodies represented by oxybutyric acid is the maximum amount which can be with blood without the development of coma. As to treatment the Allen method is carried out in Harper Hospital. Briefly this method is divided into three stages as follows: Withdrawal of all food until urine is free from sugar. Second, the exhibition of food beginning with 5 per cent. carbohydrate vegetables together with the protein and fats until the limit of tolerance is reached or sugar again appears in the urine: Third, maintaining the patient at a stationary condition just below the limit of tolerance. It is important that diabetics do not maintain their usual weight. Great care should be used in the use of excessive amounts of fats and protein after fasting as coma is likely to develop. Cards descriptive of this method of treatment were distributed by Dr. Jennings. The paper was discussed by Dr. Pankhurst, Carney, Weller and Hume. Dr. Jennings, whose paper was greatly appreciated and enjoyed by the members of the Society, was given a vote of thanks. The following doctors were present: Carney, McLachlin, Faust, Lamb, Graham, Pankhurst, Hall, Dean, Brainard, Kilborn, Weller and Gardner. Dr. Arthur Hume of Owosso was a welcome visitor. Dr. G. E. Lamb of Farwell petitioned for membership. Petition was referred to Board of Censors. Meeting adjourned.

C. B. GARDNER, Secretary, pro tem.

The May meeting of the Gratiot-Isabella-Clare County Medical Society was held at the Elk's Club in Mt. Pleasant, May 24, 1916. President Brainard presiding. The minutes of the March meeting were read and approved; also the minutes of the April meeting were read and after correction as suggested by Dr. Graham, were approved. A communication was read from Dr. Varney of Detroit, relative to sending patients with rare skin disease to a clinic in Detroit, June 16th. The application of Dr. G. E. Lamb, which was referred to the Board of Censors of Ithaca was brought up. The Board ask that they be given further time to consider it, which was granted. By motion, Dr. C. B. Gardner was elected delegate and Dr. M. F. Brondstetter and C. M. Denny alternate to the State Society meeting in August. By motion Dr. S. E. Gardiner, J. A. Reeder and H. F. Kilborn were appointed a Medico-Legal Committee. Dr. M. F. Brondstetter then made a report of five cases of Extra Uterine Pregnancy. Nearly every member either discussed this report or reported cases of their own. Dr. C. D. Pullen then read a short paper on Cerebro-Spinal Meningitis with a report of case he has encountered. This was discussed by Drs. Reeder, Burch, Foust, Brondsetter and Pankhurst. Motion was made and carried we meet in Clare in July and have our annual picnic at Crystal Lake in August. Before the regular meeting the doctors and their wives met at the beautiful home of Dr. and Mrs. S. E. Gardiner, where a short social time was spent in visiting. At two o'clock a very delightful dinner was served at the Bennett House given by the former Isabella-Clare Medical Society. At three o'clock the ladies were taken in automobiles to the Normal May Festival and after the entertainment they returned to the home of Dr. and Mrs. Gardiner where the ladies were served light refreshments. The Mt. Pleasant members are to be congratulated for the excellent way in which they entertained the Society and the members and their wives thank the Mt. Pleasant doctors for their pleasant entertainment which was very much appreciated and enjoyed.

E. M. HIGHFIELD, Secretary.

MONTCALM COUNTY

The regular spring meeting of the Montcalm County Medical Society was held on May 26, 1916 in the Greenville High School building. Dr. Richard R. Smith of Grand Rapids gave a lantern slide lecture on "Some Modern Methods of Diagnosis and Treatment of Fracture." Following this was a discussion on this subject and the usefulness of the radiogram was shown to be an important adjunct to the clinical findings in the diagnosis and treatment of fracture. Dr. J. O. Nelson of Howard City, Michigan gave a paper on the Medico-Legal Aspect of the Treatment of Fracture. This paper showed very careful and diligent preparation. Dr. Nelson certainly has the subject well in hand. We expect to have this valuable paper sent for publication in the *Journal of the Michigan State Medical Society.*

The meeting retired to the Hotel Phelps for refreshments and was concluded about midnight after the adoption of a revised fee bill and the transaction of other important business.

Resolutions of sympathy were extended to the family of our active and beloved brother, the late Dr. D. K. Black, whose presence and helpfulness were greatly missed in our Society. The meeting

was well attended and the interest shown indicates that we have one of the most active societies in the State and if any county can show us a more harmonious and helpful society we would be glad to hear about it.

Dr. F. J. Fralick, Secretary.

SANILAC COUNTY

The quarterly meeting of Sanilac County Medical Society was held in the Court House, Sandusky on Tuesday, June 6, 1916 at 1:30 p. m. There was a good attendance and the session was in every way an important one for the welfare of the Society and the public. Dr. Wm. DeKleine, Director of the Michigan State Board of Health Tuberculosis Survey Department was the chief speaker, having for his subject, "The Scope of the Present Tuberculosis campaign." Other speakers were: Dr. B. E. Brush, Port Huron and Councilor, Dr. W. J. Kay, Lapeer.

The Society decided to hold monthly meetings during the months of July, August and September. The meeting in July will be held on the 18th of the month at Lexington, when invitations will be extended to the Medical Societies of St. Clair, Huron and Lapeer. At this meeting the doctors will be accompanied by their wives and the affair will take on social as well as a professional character.

J. W. Scott, Secretary.

ST. CLAIR COUNTY

The regular monthly meeting of the St. Clair County Medical Society was held at the Hotel Harrington Thursday evening, May 25th, 1916.

Drs. J. Mathews and F. B. Walker of Detroit were guests of the Society. After a very enjoyable dinner the President, Dr. McKenzie, introduced Dr. J. Mathews who read a very interesting paper on "Post Mortem Findings of Cancer." Dr. F. B. Walker read a very appreciative paper on "Skull Fractures." A rising vote of thanks was extended to Drs. Mathews and Walker. Dr. Patterson of Blain was elected a member of the Society. Drs. McKenzie, M. A. Patterson and Cooper returned last week from a two weeks trip east. Dr. S. K. Smith has been confined to the house for the past two weeks.

W. W. Ryerson, Secretary.

Book Reviews

RULES FOR RECOVERY FROM PULMONARY TUBERCULOSIS. A Layman's Handbook on Treatment. By Lawrason Brown, M.D., of Saranac Lake, N. Y. Second edition, revised and enlarged. 12mo, 184 pages. Cloth, $1.25 net. Lea & Febiger, Publishers, Philadelphia and New York, 1916.

Dr. Brown has filled a great need and done a good service in the publication of this little book. It is written in a pleasant, concise way that is sure to reach the layman's point of view. There is a warm geniality throughout the pages that makes itself especially felt in the chapter "On Patient and Physician." Says he, "Few people realize how expensive cheap advice may prove to be."

INTERNATIONAL CLINICS. Series 26 Vol. II. A quarterly of illustrated clinical lectures and especially prepared original articles. Edited by H. R. M. Landis, M.D., Philadelphia. Published by J. B. Lippincott Company, Price $2.00.

The interesting articles in this volume are particularly—Tetanus Lessons Gleaned from the War by J. B. Young—containing new information on the incubation period of the disease and some observations on the intra-venous treatment. There is considerable new data in the article "An Analysis of Fifty Cases of Dysthyroidism" by Jno. M. Swan. These are only two of a number of well chosen papers.

THE KINETIC DRIVE; its phenomena and control. By George W. Crile, M.D., Professor of Surgery at the Western Reserve University. Octavo of 71 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1916. Cloth $2.00 net.

Dr. Crile presents in a new and entertaining style the old Spencerian aphorism—"Life is the adjustment of internal relations to external conditions." The mechanism of vital response is delightfully portrayed. The monograph offers a fitting addition to "A Mechanic's View of Psychology." We quote, "The emotional drive with its consequences of infection, exertion, or physical injury is best met through training and education leading to philosophy of life that insulates the individual against destructive psychic stimuli.

FRACTURES AND DISLOCATIONS, With special reference to their Pathology, Diagnosis and Treatment. By Kellogg Speed, S.B., M.D., F.A.C.S., Associate in Surgery, Northwestern University Medical School; Associate Surgeon Mercy Hospital; Attending Surgeon, Cook County and Provident Hospitals, Chicago, Illinois. Octavo, 888 pages, with 656 engravings. Cloth, $6.00, net. Lea & Febiger, Publishers, Philadelphia, New York.

In this work a successful attempt is made to teach the pathology of fractures visually. Even the educated eye of the surgeon is not always able to interpret the results shown by the Roentgenogram, so the author, assisted by an artist skilled in such work, has with infinite labor interpreted by means of original line drawings the essential features of a large number of X-ray pictures, representing all the fractures generally encountered in practice. This is a boon which is not, so far as we know, granted by any similar work.

Another innovation is introduced by bringing fractures and dislocations of anatomically related structures together, instead of treating them separately as is usual in work of this character. When it has not been possible to consider both subjects in one chapter, the fracture of a bone and the dislocation of the adjoining joint are treated in con-

secutive chapters. The advantages of such an arrangement for ready reference by student or practitioner is obvious.

This book contains exactly those suggestions which the general practitioner (who sees comparatively few of such cases) inevitably requires, and it will satisfy the busiest operating surgeon because of the wealth of helpful hints which Dr. Speed's enormous experience enables him to set before his readers. Above all, this work is modern and up to the minute in regard to the subject of which it treats.

BLOOD-PRESSURE: ITS CLINICAL APPLICATIONS. Second Edition, Revised and Enlarged. By George W. Norris, A.B., M.D., Assistant Professor of Medicine in the University of Pennsylvania; Visiting Physician to the Pennsylvania Hospital; Assistant Visiting Physician to the University Hospital; Fellow of the College of Physicians of Philadelphia. Octavo, 424 pages, with 102 engravings and 1 colored plate. Cloth, $3.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1916.

The importance of blood-pressure in diagnosis, prognosis and treatment is becoming more widely recognized every day, and with this recognition has come the creation of a literature devoted to this special field. Dr. Norris has given an adequate description of this important field, clearly elucidating the principles involved and carefully pointing out their practical applications. He has presented his subject in condensed form, and as definitely as the present state of our knowledge permits.

The first edition of this work was exhausted in considerably less than two years after publication. In the process of revision for the second edition an increase in size has been necessary in order to include a survey of the constantly growing literature on blood-pressure. Both the experimental and clinical data which has been available are included, for it is the combination of these two that the physician must rely upon when handling his cases. The author's method of discussing each part of the subject is such that his book is a well balanced presentation of the latest scientific information regarding blood-pressure and its clinical applications. It is probably the most complete and authoritative work in English on this extremely important topic. The illustrations are well chosen and a help to the easy understanding of the text.

EMBRYOLOGY, ANATOMY AND DISEASES OF THE UMBILICUS TOGETHER WITH DISEASES OF THE URACHUS. By Thomas S. Cullen, Associate Professor of Gynecology in the Johns Hopkins University. Large octavo of 680 pages with 269 original illustrations and 7 plates by Max Brodel and August Horn. Philadelphia and London: W. B. Saunders Company, 1916. Cloth $7.50, net; Half Morocco, $9.00, net.

He who was accustomed to thinking that hernia alone comprised the only lesion of the umbilicus will experience a startling awakening when reading this new work of Cullen. The author has undertaken an extensive survey of the literature that consumed three years of time and has succeeded in classifying the lesions of the umbilicus and presents the first compilation of such diseases.

The embryology and anatomy of that region is discussed most thoroughly and excellent illustrations add to the value of the text. There then follows through 39 chapters a discussion of the diseases of the umbilicus commencing with the Infection of the Umbilicus in the new-born to Tuberculosis of the Patent Urachus. It is really a wonderful work that necessitated the expenditure of much time, study and investigation.

The text, the excellent illustrations prove that it was written by a master of ripened experience who has prepared a systematic, instructive presentation of the lesions of a region that has been the subject of but small consideration. As a result we now have for the first time a reliable treatise of the umbilical region and the pathology that it presents. We cannot but recommend it most unreservedly. The author's effort has awakened our admiration as also our respect for this truly wonderful and valuable monograph. It is bound to be ranked with the best works of our literature.

THE ART OF ANESTHESIA. P. J. Flagg, M.D., Lecturer in Anesthesia, Fordham University Medical School, Anesthetist Roosevelt Hospital, etc. Cloth 333 pages, 136 illustrations. Price $3.50. J. B. Lippincott Co., Philadelphia.

We recognize the fact that the administration of an anesthetic is not a mechanical performance but rather an art and thus we welcome every reliable recorded series of observations on the subject. This work is a welcome and valuable treatise of the subject and is based on the author's extended experience.

The history of anesthesia is briefly considered and general anesthesia is then taken up in detail and by stages as well as by the means of several agents and avenues of administration. The preparation of patients, local anesthesia, spinal anesthesia, table positions of patients, the treatment of emergencies and post-operative recovery are all subjected to a most practical and scientific discussion. Excellent illustrations are interspersed through the text.

The work is one that should be read and studied by every practitioner and is deserving of our unstinted approval. It will do much to elevate the giving of an anesthetic and to place it on a higher basis as a special art.

Miscellany

THE BUSINESS OF DOCTORING

There's a vast difference between being a grasping, mercenary doctor, and that type that fully appreciates the "business" side of his calling, if you please. The doctor who is afraid to collect his just dues should give a thought to his neighbor, the banker, whose very commercial existence centers around his ability to "get the money." The unfortunate who can't meet his honest debts is worthy of sympathy, but the man who can but don't or won't is not entitled to undue consideration. Understand your man, and his circumstances, then treat him accordingly. One of our advertisers this month, page VIII, possesses the necessary skill to handle obstinate cases with great success. From evidence before us, we believe they can save you considerable time, work, worry and expense in doing your collecting for you.

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Original Articles

DYSMENORRHEA WITH ANTEFLEXION AND RETROCESSION.*

FRANK A. PEMBERTON, M.D.
BOSTON, MASS.

No attempt will be made to cover the whole subject of dysmenorrhea in this paper as that would involve the useless restatement of matter which you already know. We have attempted to treat one type of case in what seems to be a logical manner and wish to explain the method and the results we have obtained.

Many of the patients suffering from dysmenorrhea are found to have on examination, a small, anteflexed uterus which is situated lower down and further back in the pelvis than usual, a position called retrocession. The uterus as a whole is usually tipped backward, the cervix pointing straight down the vagina or sometimes forward. The fundus is small and thin, of the undeveloped type, while the cervix is either short and small, or long, thin, and conical, but its proportionate size as regards the fundus is larger than normal in the adult. This is the normal condition of the uterus before puberty and it would seem that in this class of patients the uterus does not develop at the time of puberty. The persistence of this position is probably due to a deficient development of the uterine musculature which under normal conditions enormously increases at puberty. Therefore we may consider that anteflexion with retrocession is a condition of relaxation and it is logical to treat it as one would other conditions of relaxation such as retroflexion and prolapse, that is by suspension of the uterus.

It has been our experience to find, in the majority of these cases, that the cervical canal is not obstructed; that is if the ordinary uterine sound be bent in the proper curve it can be inserted into the uterine cavity with no difficulty and the cervix can be easily dilated.

However, we find some cases in which difficulty in dilatation is met at the internal os or at the point where the uterus is bent. We use the graduated Hank's dilators followed by the Goodell. On inserting the smallest dilator a definite obstruction is felt which gives suddenly, when sufficient force is applied, as if the tissues were ruptured, after which the dilatation proceeds smoothly, although with more difficulty than in the first class of cases. We feel that this obstruction is probably due to a cicatricial band at that point.

When the abdomen is opened these uteri are found to be slumped down in the hollow of the sacrum. On lifting them up they are felt to be flaccid and, if drawn up by the round ligaments, they straighten out perfectly because they are so limp. This is the only way that the cervical canal and the uterine cavity can be straightened out without doing a cutting operation on the cervix.

The operative procedure carried out is as follows: The cervical canal is first dilated in order to overcome the obstruction we have spoken of if it is present. No curetting is done unless there is indication for it. The commonest indication is a chronic endocervicitis which is sometimes found in these cases, and if such a condition is present, the cervical canal is thoroughly curetted and then cauterized by the insertion of a thin bladed actual cautery, first with the plane of the blade in the antero-posterior direction and then at right angles to this.

Next the abdomen is opened and examined for any pathological process, which is remedied if present. Then the uterus is drawn up and the round ligament sutured to the anterior abdominal wall at points above the pubes on each side of the incision so that the uterus can be felt to be straightened out by silk sutures passed around the round ligaments one-half an inch from their insertion into the uterus, and through the peritoneum, muscle, and fascia of the abdominal wall. This point of attachment on each side is one to one and one-half inches above the symphysis. Careful examina-

*Read at Fiftieth Annual Meeting M.S.M.S., Grand Rapids, September, 1915.

tion shows that this is done without pulling up on the vagina.

We have done this operation eighty-six times with no mortality. These were cases which showed only anteflexion with retrocession; there being no pathological process such as adhesions, fibroids, and so forth. We have been able to trace forty-four of them. Four of these patients say that they are entirely relieved of their symptoms: nine say that they are much better; and twenty-three say they are better than before operation. Of the remaining eight, seven are no better and one is worse. That is, approximately 80 per cent. are benefited by the operation.

In regard to length of time since the operation of those benefited:

17 per cent. were done 5 years ago.
17 per cent. were done 4 years ago.
42 per cent. were done 3 years ago.
11 per cent. were done 2 years ago.
11 per cent. were done 1 year ago.

Of those not benefited by the operation only one said that she was relieved for a few months and then relapsed to her former condition.

These results are better than those obtained by the other methods which have been tried in the clinic at the Free Hospital for Women. Simple dilatation gives, with us,, only about half the patients benefit. Successive dilatation carried out conscientiously by Dr. H. W. Baker gave 66 per cent. of patients benefit. The use of the stem pessary is dangerous on account of the likelihood of starting a salpingitis and it quite frequently leaves the patients with a distressing endocervicitis. The various operative procedures on the cervix are all mutilating and likely to leave the patient with a chronic cervicitis.

CONCLUSIONS.

We may consider anteflexion with retrocession as a condition of relaxation which should be treated as such.

My thanks are due to Dr. W. P. Graves who suggested this method of treatment, for allowing me to report his larger number of cases with my own.

SLEEP AND SLEEP-DISTURBANCES.*

W. W. Kahn, M.D.
DETROIT, MICH.

While it is a musty truism, that life is a state of activity broken by rest, as a matter of fact, rest or sleep is of such overwhelming importance that life can be defined, with probably greater correctness, as health-giving rest interrupted by body-destroying activity. Rest is the original and permanent cosmic state out of which temporary activities arise; rest is the mother to whom the child returns with its hurts and bruises; rest is, as Gould says, the real *vis medicatrix naturae,* nature's healing force.

Sleep is so evidently a part and parcel of normal life that any attempt to eliminate it for too long a time will invariably cause dissolution and death. A normal phenomenon of such eminent necessity can be expected to be dealt with commensurate earnestness, but a quest of the text books on physiology reveals that as a rule the subject of sleep is not mentioned even in their indexes, let alone taught with becoming sincerity. Why this is so is not quite clear to me, as there is a voluminous literature on sleep and sleep-phenomena by laboratory experimenters, by psychologists, philosophers, neurologists, alienists, and other persons interested in mental and neural life.

But today, as of yore, most of us have a home-made theory of sleep with the result, that today, as of yore, the treatment and cure of sleeplessness still constitutes a great stumbling block in medical practice.

While the last word has not yet been said about the physiologic phenomena of sleep, the world has gained much knowledge from the investigations of Durham, Hammond, Howell, Mosso, Von Kries, Von Frey, Von Recklinghausen and numerous other investigators. They thought to prove by laboratory experiments that sleep is caused by cerebral anemia or by poisoning of the system by the fatigue-products accumulating in the blood as end results of bodily activities.

On the other hand, Dr. John F. Shepard of Ann Arbor undertook in 1913 a very thorough study of the circulatory phenomena of sleep. He found that during sleep there is a marked and sustained increase in the volume of the brain due to an active hyperemia and that dreams are not a normal phenomenon of sleep, but a disturbance of it caused by inner or outer stimuli at a time when the body nears the waking state.

Whether cerebral anemia or hyperemia accompany sleep, they certainly are not its causes, as both are also met with in the waking state; neither are the toxins the real cause, for as Dr. Boris Sidis, the famous Harvard psychologist, insists: Sleep is not a disease, not a pathological process, but a normal state and a protective function. We sleep, not because we

*Read before the Tuscola County Medical Society, May 25th, 1916.

are poisoned, but that we shall not be poisoned or exhausted.

Another explanation is given by the greatest of all medical philosophers, Dr. Geo. M. Gould. He is so much impressed by the unspeakable wonders of sleep that he finds the only thinkable solution of this riddle in the assumption of a superhuman intelligence or, as he calls it in this connection, the chief engineer of our marvellous body machine.

But no matter how we may explain the phenomenon of sleep, the facts remain, that sleep is a normal and necessary part of life, that sleep is dreamless and that dreams are a disturbance of sleep, that insomnia is positively injurious to health, and that we as physicians ought to be and are greatly interested in the causes and cures of insomnia and disturbing dreams and nightmare.

There have been as many explanations for sleeplessness and dreams as there have been for sleep. Sleeplessness may be caused by irritations, pain, organic diseases of the viscera, by poisons (lead, arsenic, etc.), by stimulants (tea, coffee, etc.) ; but probably more than nine-tenths of all insomnias have no visible organic cause. Some psychologists have placed the reason for insomnia to a faulty state of mind of the patient, to his supposed fear of terrifying dreams or his fear that he will be unable to sleep on account of some previous sleepless nights, and thereby develop a case of so-called intrinsic insomnia.

Again every dream represents, at bottom, according to Sigmund Freud and his school, an imaginary fulfillment of an ungratified wish, and every nightmare is an expression of intense mental conflict centering about some form of "repressed" sexual desire.

The treatment of insomnia as advocated by the psychologists is more or less a treatment by suggestion. Dr. Thomas Hyslop, the famous English psychologist, recommends prayer as quite effective. Hypnotism was very popular for some time, but was finally found to be wanting. Then suggestion was advocated, especially by Dr. Boris Sidis. But if, according to the psychologists, the patient fails to sleep first after the use of hypnotism and then of suggestion or auto-suggestion (prayer), if the attempt to show him the error of his mode of thinking has been fruitless, then there is reason to suspect the presence of a "subconscious complex," very likely an "Oedipus complex," ascertainment of which by psychologic analysis will prove the way to cure.

The regular practitioner, who would not recognize an "Oedipus complex" if he met it face to face, uses sulfonal and other hypnotics; but as Marie de Manicéine wrote about twenty-five years ago, the effect of narcotics resemble sleep by producing temporary interruption of consciousness, at which point the resemblance ceases. So the medical profession soon lost faith in hypnotics and uses it today only when a temporary cessation of consciousness is absolutely necessary. In its stead, it uses dietary and hygienic measures and the routine ordering of massive doses of bromides, well diluted, three times daily before meals and once before going to bed.

It is useless for me to emphasize before a body of physicians the fallacy of these procedures. Every one of you know how little can be done for insomnia. This would not and ought not to be so if you had been told about the results achieved by hundreds of creditable physicians all over the country, published with exceeding frequency in creditable medical journals for the last twenty-five years, a mode of treatment and cure of sleeplessness and sleep-disturbances that is so much a matter of daily routine in hundreds of medical offices, that the wonder is how any medical practitioner can escape knowing about it. This method is the one used all over this wide land by the oculists by means of carefully and scientifically fitted glasses.

The rationale of it can not be better stated than in the words of Gould, as published in the second volume of his Bibliographic Clinics.

"The astigmatic and anisometropic eye can scarcely rest from muscular and innervational strain for a second of the sixteen waking hours. The heart rests every beat; every organ and every muscle rests, because no muscle can be steadily innervated for more than a few minutes without painful effort. The safety of the organism requires this sixteen-hour restlessness of the astigmatic eye. Nothing like this denial of this absolute law of physiology exists in any other organ in the body. The eye dare not be injured, and any injury to it must be reflexly shunted to the brain or to other organs; in extreme cases of overuse, the fundamental conditions of organismal existence, nourishment and cerebral control, are denied, and the organism itself is profoundly hurt or even destroyed. That, or something like it, is the philosophy of eyestrain and of reflex ocular neuroses.

"Lastly, the injury to the cerebral and neural mechanism and its exhaustion is so great by the sixteen-hour struggle that when at night it is given over to the chief engineer, the repair-

ing is such an active process that there is no rest possible, and the human consciousness is aroused and awakened by the very stir and din of the repairing process. That, or something like it, seems to me to be the philosophy, or rather physiology, of the insomnia of eyestrain."

What are my own experiences with refraction as a cure for insomnia and nightmare?

Of the last four hundred cases, one hundred and fifty-one suffered from more or less severe sleeplessness. The duration of their sleeplessness was as varied as the severity of this malady. Of the 151 patients eighty-seven reported recoveries or substantial improvements and sixteen reported failures.

Twenty-four of the one hundred and fifty-one insomniacs also suffered from nightmare, as also sixty-eight others who enjoyed healthful sleep, when not disturbed by terrifying dreams. Of the ninety-two nightmare sufferers, forty-seven reported recoveries, while six failed to improve.

To repeat: Out of 400 patients:

127 suffered from poor sleep without nightmare.
24 suffered from poor sleep with nightmare.
68 suffered from nightmare only.

Total 219 patients suffered from some form of sleep-disturbance.

The percentage of recovery in this series of cases was 85 per cent., a percentage that is, no doubt, duplicated in hundreds of refractionists' offices.

So out of 400 eyestrain sufferers, 219 or over 50 per cent. had more or less broken, pitiful, restless sleep, and interrupted by frightful dreams. None of them received any other treatment than their glasses. No fanciful hypnosis was tried, no searching for Freud's Oedipus or other complexes was undertaken, nor were bromides in massive or homeopathic doses prescribed. To be sure, the cures are not permanent, for the patients will stay cured only so long as they remain perfectly glassed. Should they refuse to wear their glasses properly, or should a subsequent change in their refractive errors not be promptly and correctly neutralized by new glasses, the old reflexes may return in full, or in part, or an entirely new set of symptoms may make its appearance.

Much has been said about the baneful influence of worry, mental strain, and the intensity of our modern life on healthy sleep. Clinicians of the highest rank have insisted upon these conditions as important causes of insomnia. Sir James Sawyer, an English authority, in one of his lectures describes a case of a young professional man, who in the beginning of his practice has been waiting, waiting for clients or patients. He needs money, but he refuses to borrow—he wants to earn it "and while he has been hoping and waiting, he has been working early and late in his exhaustive studies, perhaps straining his powers for some higher examinations; at last, he has fairly broken down. He looks thinner; he is filled with groundless fears; he is weighed down with the ineffable misery of insomnia; he has headache constantly and noises in his ears; he thinks his energy is failing; he is dull and listless; he has been lying awake for hours after going to bed, or, waking in the 'small hours,' he has been unable to sleep again, and when he slept he has had horrible dreams; and he comes to us for help because he can scarcely sleep at all, and he is possessed by the fear that he is going mad. His misery is urgent; it is the unspeakable misery of intrinsic insomnia."

What is this intrinsic insomnia? How ought we, by the light of modern experiences, diagnose this case? Does the beginner in the practice of medicine suffer from insomnia while waiting and worrying for patients or does he go to bed to be sound asleep in a few minutes forgetting patients or rather the lack of patients? Every one of us had to go through the same struggles and none of us, I dare say, had a case of intrinsic or, for that matter, extrinsic insomnia. While worry does deminish bodily resistance, it does not cause a symptom-complex as so vividly described by Dr. Sawyer. There is only one cause, that according to our present-day knowledge would cause all these symptoms in an otherwise healthy young man, and that is *eyestrain*. The crux of this case lay in the fact, that the patient had been working early and late in exhaustive studies for some higher examination without correct glasses. Debilitated by financial worries, he broke down when he put his eyes to an extra amount of strain. He began to show typical symptoms of eyestrain; he had constant headaches; he had the noises in his ears so often connected with headaches; it took him hours to fall asleep, and he awoke in the small hours unable to sleep again; he also had nightmare; he showed the characteristic eyestrain symptom of groundless worrying; he began to lose weight, and as likely as not, unable to procure medical help, he went insane or committed suicide. If you scan closely the suicide reports in our daily papers, you will find sufficient reports of suicides by people who had no

finanical worries, but who were always ailing, who had been the rounds of our best physicians and still had been unable to achieve health, who had been long sufferers of insomnia unrelievable by hypnotics and, who, in an hour of extreme despondency, threw off life's burden.

To sum it all up:

Sleep is a normal state of life.

Dreams are sleep-disturbances and more or less pathologic, especially nightmare.

No satisfactory physiologic explanation for the sleep-phenomenon has as yet been found.

The best explanation for functional insomnia and nightmare has been given by Gould in his theory of overstimulation with consequent exhaustion.

Eyestrain is by far the most frequent cause of reflex neuroses, of which insomnia and nightmare are a part.

One-half of all people suffering from eyestrain also suffer from some form of sleep-abnormality.

About 85 per cent. of my insomnia and nightmare cases, evidently due to eyestrain, were cured by glasses.

The welfare of a suffering world is impatiently waiting for the awakening of the medical profession to the new and better teachings of *functional* pathology.

510 Fine Art's Building.

CONSTIPATION IN INFANTS.

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Constipation is a common condition in infancy. There is some reason for this in the anatomy of the gastro-intestinal tract of the infant. Compared with that of the adult the colon is long and moveable. The mesentery is long and allows the colon to kink easily. The sigmoid drops down and thus forms a reservoir which is not readily emptied. This anatomical condition is the rule in early infancy. In addition, there sometimes occur departures from the normal anatomy which result in the most dangerous types of constipation. Of these we may mention two anomalies which have been recognized not infrequently of late. The first is congenital pyloric stenosis. These children are constipated because not enough food passes out of the stomach to form a proper stool. The second is the condition known as megalacolon or Hirschsprung's disease. The colon is greatly dilated and the bowel may go for days without any of the contents escaping.

It is the purpose of this paper to discuss constipation in the child of normal anatomy. We shall consider only those more common forms of constipation which one is constantly being called upon to treat.

The diagnosis of constipation in infants as a rule offers very few difficulties. However, one must not take the statement of nervous or inexperienced mothers without careful consideration. Mothers will often state that a child is not constipated because the child has one stool a day. This stool may be dry and hard and entirely too small. On the other hand a child may go for thirty-six or forty-eight hour intervals and have a large soft stool that is perfectly normal in every way. A mere statement of the frequency of the stool is not sufficient. One should inquire as to the color of the stool, its consistency, size, and whether it soils the diaper or rolls off in a putty like mass scarcely leaving a stain. The presence of mucus or blood may indicate irritation of the rectum from retention of the stool until it is hard and scybalous. A formed stool of very large diameter often indicates an abnormal retention within the rectum. Such a stool may, however, be passed without the child's having any other signs of constipation.

Having made certain that the infant is suffering from constipation, the next thing to do is to determine, if possible, the cause. It is apparent that the etiology of the condition may be different in the case of the baby who takes mother's milk from the breast and that of the baby who takes cow's milk from a bottle. There are some factors, however, which may be present in both conditions and these we shall consider first.

The common and pernicious use of cathartics in infancy I should place first in the list of the causes of constipation. If the baby has the colic, or vomits because it eats too much or has a cough, it is given a physic. If the baby's bowels move too often or not often enough a physic is given. If the baby cries because it is too warm or too cold or because it is not kept clean or dry or because it is hungry or otherwise neglected, physic is expected to remedy these ills. Not long ago I saw a baby who had taken a teaspoonful of castor oil every night for six weeks. When I was called, I asked the mother why she gave oil. She said "Because the baby was constipated." Of course no one could tell whether the baby was constipated or not. When the oil was stopped and the mother's diet was regulated the baby was not constipated. One frequently sees a baby who is given a physic

at bed time and paregoric because it cries in the night. Very recently I saw a baby who had been given senna tea at night. Later when she began to cry from the griping of the physic she was given paregoric to keep her quiet. The abuse of cathartics causes much gastro-intestinal disease and many deaths among infants under one year of age. This abuse of cathartics is a cause not only of constipation but of all sorts of gastrointestinal disturbances. It has been observed that children who develop intussusception frequently have a history of the continuous use of severe cathartics. There is another cause of constipation which should be mentioned in this connection. It is the injudicious use of enemata and suppositories. The child soon learns to wait for this stimulation of the rectum and does not have a stool until the stimulation is supplied.

A second cause of constipation which may occur in either the breastfed or bottlefed, is gastric indigestion and vomiting due to improper habits in feeding. Babies that are fed at frequent intervals or are fed too much or improper food may have their gastric function so deranged that they are unable to retain a proper amount of food. They become constipated for the same reason that a baby with a pyloric stenosis does. Not enough food gets into the bowel to form a proper stool. Obviously the use of castor oil or an enema will not produce a free evacuation of fecal matter if it is not present in the bowel.

Babies who are given insufficient food either from the breast or the bottle are constipated for the same reason. The residue left after digestion is so small that peristalsis is not stimulated and the stools are small and infrequent. Constipation in the nursing baby should always bring up the question of the amount of milk that the baby is getting at a feeding. This may be ascertained by weighing before and after feeding or if this means is not available, by watching the child's weight from week to week. Failure to gain in weight associated with constipation and not associated with gastric disturbances almost always indicates insufficient food.

Another cause which may be found in children either breastfed or bottlefed is fissure of the anus. This cause is usually of short duration, but is a very effective one when present. When the anus begins to dilate, severe pain is produced and if it is possible the child ceases to strain. The longer the defecation is postponed the more severe the pain on attempting to pass the stool.

In breast feeding constipation in the mother undoubtedly results in a constipated child. Just why this is so is uncertain, but there is abundant clinical evidence that such is the case. Errors in the mother's diet, lack of proper exercise and various pathological conditions in the pelvis or perineum following labor may be factors in the constipation of the mother.

In artificially fed children the great variety of methods of feeding make many more possibilities of constipation from dietary errors than in the breast fed. There are certain errors in diet which are especially likely to result in constipation.

Fat constipation or constipation which results from the feeding of milk with high percentage of cream is often observed. Since the pendulum in infant feeding has swung from the feeding of top milk mixtures or milk and cream mixtures to the simple dilution of whole milk this type of constipation has been much less. The stools in this type are easily recognized. They are light colored, of a putty like consistency, have a foul smell and roll off the diaper without staining it. Simple dilutions of whole milk have a low fat content and seldom show this sort of a stool. It often appears where cream mixtures containing a higher percentage of fat are fed.

A mixture containing a low sugar percentage often produces constipation. The kind of sugar makes a great difference. Malt sugar modifications are much more laxative than those made with sugar of milk. Dennett gives it as a rule of thumb that a baby up to ten pounds in weight should have an ounce of sugar a day and over ten pounds an ounce and a half. Too much sugar may result in gastric disturbance or diarrhea, so that each baby's sugar tolerance must be carefully tried out.

An insufficient amount of water may be a factor in constipation. If a baby is taking a concentrated milk mixture one should make sure that the baby is given water between meals. It is surprising sometimes to observe the beneficial effect of an increased amount of water.

Boiling milk has become a common practice in cities and communities where certified milk is not obtainable. This procedure has many advantages. Boiling destroys tubercle bacilli and all other bacteria. It also makes the milk more digestible. The curd caused by the action of the gastric juice on the milk is much smaller and not so tough. Brenneman's work on the character of the curds has been of great value. But feeding the infant on sterilized milk sometimes does result in constipation. I think that

the danger from this cause has been overestimated and that boiled milk when properly modified is not likely to produce this result. Still, one must consider this possibility in trying to determine the cause of this condition.

To recapitulate the more common causes of constipation in infancy we may mention the abuse of cathartics, gastric indigestion, insufficient food ingestion, fissure, constipation in the mother, too much fat, too little sugar, too little water, and boiled milk. There are other things that may produce this condition but if one will bear in mind these, he will not be likely to overlook the cause.

The treatment of this condition is usually suggested by a careful consideration of the cause. The indiscriminate use of catharties by both the profession and the laity is to be condemned. Telling the mother to give a baby a dose of castor oil or calomel will not cure constipation. The mother should be warned against the use of the various proprietary cathartic remedies which are so widely used. In almost every house where there is a baby the question is asked what kind of physic is best for the baby. In many cases the adminstration of a physic is a part of the routine of the baby's care at night. Mothers should be given the advice that no kind of physic is best for continuous administration and that other measures are much more useful in the cure of constipation.

Gastric indigestion due to improper habits of feeding is as a rule easily remedied. The mother who feeds her baby when it cries and lets it sleep when it wishes is heading for trouble. This brings up the question of the proper interval for infant feeding. Up to the age of five or six months the three hour interval seems to work best. After this age the four hour interval can be substituted. Irregularity in feeding at night is a common fault in mothers. For the young infant two night feedings are enough. After the first two months the child should go from ten at night until six in the morning with only one feeding. After five or six months the night feeding should be omitted. The common practice of letting the baby sleep with the mother almost always results in frequent and irregular feeding at night. This practice cannot be too strongly condemned.

Constipation due to insufficient food is remedied by giving more food. In the bottle fed it is a simple matter to compute the requirements of the child and to know whether or not they are being met in feeding. In nursing babies the matter is not so simple.. If the baby does not vomit and if the stools are small and the baby is not gaining properly the trouble is ordinarily with the quantity of milk rather than the quality. In these cases supplementary feedings are indicated. Before or after each nursing the baby may be given an ounce or more of a mixture of half milk and half water with a suitable addition of a malt sugar. This is very much better than the common practice of weaning the baby on account of insufficient mother's milk. In some cases the giving of an ounce of malted milk or malt sugar mixture two or three times a day before nursing will relieve constipation.

Constipation in the mother is a condition that is often overlooked in the management of a constipated nursling. This condition is best corrected by a coarse diet, plenty of fruit and a proper amount of exercise. When the condition is not relieved by such measures the mother may be given small doses of caseara three times a day before meals.

Fat constipation is a condition which is frequently seen in babies who have been overfed with cow's milk. They have usually gained rapidly in weight for a time; they become fretful; the weight becomes stationary; and the stools are dry and white and can be rolled off the diaper without staining it. The odor of the stool is very offensive. In severe cases the best treatment for this condition is the immediate withdrawal of all fat and the giving of skimmed milk with malt sugar or malt extract. If a diluent is used oatmeal gruel or barley gruel is good. The fat is gradually returned by substituting each day one ounce of the whole milk for one of skimmed milk. In less urgent cases the entire withdrawal of fat is unnecessary, the condition being met by a reduction in the fat percentage.

Constipation is often seen in children who are fed milk and water without the addition of sugar or milk modifications with insufficient sugar. The addition of a sufficient amount of malt sugar or malt extract will often entirely relieve this condition. In adding the sugar it is well to increase the amount gradually rather than to try to give the desired amount at first. A teaspoonful may be added daily to the twenty-four hour feeding until the requisite amount is reached. In children five or six months of age cereal gruels may well be added and these have laxative value. Children after the first six months who are bottle fed do well on the addition of some variety to the milk diet. We have just now mentioned the cereal gruels. Fresh fruit juice is of undoubted value not only

for its laxative action but also in the prevention of scurvy. Where boiled milk is used it is well to begin with a small amount of orange juice at an earlier age. Older infants may have meat juices and broths. Scraped raw apple or baked apples may have a very beneficial action in increasing intestinal elimination. Vegetables thoroughly cooked and thoroughly mashed or shredded may be used. Bottle fed children do much better on the addition of such foods than on too large quantities of milk. Babies seldom take more than a pint and a half of milk a day and keep well.

From this discussion it is apparent that in the writer's opinion the dietary treatment is the important factor in the management of these cases. Another important factor is habit. As in adults, this may be of great value in avoiding constipation. As early as possible the infant should be trained to use a vessel or nursery chair.. The child should be placed on the vessel or chair soon after the feeding, when peristalsis is most likely to be vigorous. In this connection one may mention the value of abdominal massage in stimulating peristalsis. The early establishment of a regular habit of the daily stool is a most gratifying method of avoiding constipation in the young child.

The question of how long the child should be allowed to go without a bowel movement must be determined in each case. Some children may go forty-eight hours and have a large normal bowel movement with no discomfort. In general I think that both the mother and the physician are too ready to interfere if elimination seems to be delayed. In young children a simple enema of warm water given with a bulb syringe is usually sufficient to produce a bowel movement. But frequent repetition of this procedure causes the child to wait for the stimulation of the rectum before it will try to have a stool. Suppositories of glycerine or soap have the same objection and if used over too long a time may cause irritation of the rectum.

The use of milk of magnesia in small doses seems to be the best procedure where some cathartic is needed. For the bottle fed a half teaspoonful or more may be put into the evening feeding and usually will produce a free movement without griping or straining. Cascara and senna are frequently used but in my judgment they are seldom required in the treatment of ordinary constipation. Castor oil for this purpose is to be condemned.

In conclusion it may be said that the question of constipation in infants is primarily a question of proper feeding. Laxatives and enemata will not often be required if the right kind of food is given in proper amount and at proper intervals.

THE THERAPEUTIC APPLICATION OF OVARIAN EXTRACT.*

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There is no more fertile, no more interesting field in research medicine than the domain of the internal secretions. The physiology of the endocrine glands covers the entire plane of internal medicine. The different members of the internal secretory system are closely linked to each other as well as to the other organs of the body. It would be interesting, no doubt, to trace out this close relationship that each gland with an internal secretion has to the other members of the endocrine family but that is a subject in itself and time will not permit. The fact should be remembered, however, when any one member is up for discussion that hyper- or hypo-function of any gland, possessing an internal secretion, always has its effect upon the other members of the family.

The member of the endocrine group that will be discussed at this time, is, as announced by the title of this paper, the ovary. It will be necessary, in order to bring out a rational therapeusis of ovarian extract to review somewhat at length, the anatomy and the physiology of the ovary. The ovary is a densely fibrous organ, situated in the pelvis on the posterior surface of the broad ligament in a shallow pouch—the "fossa ovarica." It is about 40 millimeters long, 20 millimeters wide and about 10 millimeters thick. It weighs about 5 gm. It might be stated here parenthetically that the ovary possesses two secretions, an external which is manifested by giving off of the ova and an internal or the pouring into the blood of a hormone. It is the latter, the internal secretion, that forms the basis of this article. The ovary itself may be divided for our consideration into three parts, divisions that should be borne in mind during the later discussion, on this subject. These three divisions are the follicle apparatus, the yellow body or corpus luteum and the so-called interstitial gland. Before taking up these separate divisions, mention might be made of the enormous amount of literature on the subject of the glands with an internal secretion. Biedl in his book on the

*Read before the Kalamazoo Academy of Medicine, Sept., 1915, and before the Detroit Academy of Medicine, Jan., 1916.

internal secretions gives the literature up to 1911 and has about 7,500 references. In his later edition he has added about 1,200 more. It will be seen, although not all the references are upon the ovary as a gland with an internal secretion, that an enormous amount of work has been done and is still being done upon the endocrine glands. But I am wandering far afield and must come back to the consideration of the different divisions of the ovary mentioned above. The ovarian follicle is perhaps so well known as to need no minute description and it really does not enter into this discussion until after it has ruptured and expelled the ovum. The cavity left after this expulsion fills with blood and there is formed the so-called corpus hemorrhagieum. This blood clot organizes contracts and in its mesh work, cells are formed or enter from the membrane granulosa.. By the disposition of the yellow coloring matter or lutein in these cells, the yellow body or corpus luteum is formed. This yellow body persists in the non-pregnant female until the next ovulation or about three weeks. In the pregnant woman, the corpus luteum verum usually last about five months but otherwise differs in no way from the corpus luteum spuriousum or false corpus luteum. To repeat lest there be some confusion arising from a misinterpretation of these terms, there is no difference except perhaps of degree, between the corpus luteum of the menses, called the corpus luteum spuriousum, false corpus luteum or corpus luteum menstruonis and the corpus luteum of pregnancy, called the corpus luteum verum, true corpus luteum or corpus luteum gravidis. These terms are all used and the thing to remember is that the difference is one of degree, not of kind. The interstitial gland or the third division is not so well understood and much work is yet to be done before its accurate formation, origin and function are determined.

It is supposed that it arises from an incomplete primordial follicle, in other words from atresic follicles or follicles that have not reached their full and complete development. Bearing in mind this somewhat superficial description of these three divisions of the ovary, it is next obligatory that an explanation and application be made as to the function of each, in the female body economy. But at the same time it should be remembered that these three divisions i. e. the follicular apparatus, the corpus luteum and the interstitial gland, do not have their functions sharply defined, the one from the other, and at times they all work together in perfect harmony in carrying out the internal secretory power of the ovary.

Some one has said *"Mulier propter ovarium est, quod est."* It is the consensus of opinion now, that it is not a nervous influence but chemical substances, hormones, if you will, which cause the deep changes in the female organism. This fact has been proved by the results of ovarian transplantation. But whether the ovarian hormone is produced in the follicle in the corpus luteum or in the interstitial gland is at present uncertain. But certain it is that the internal secretion of the ovaries brings about a protective influence upon the development of the sexual peculiarities of women. In fact it must be admitted that even in the prepuberital period of development in young girls, characteristic body and psychical signs are present, which differentiate in a marked way, the female sex from individuals of the male sex of the same age. Further that the ovary possesses an internal secretion even before puberty. For these phases the follicular apparatus and the interstitial gland can only be considered. But with puberty there comes a change in the cyclical life of the female, which is shown objectically by the appearances of the menses. The most important cause of the cyclical appearing menses is to be found in the ovary, for by its removal at operation, by its atrophy at the menopause or by its destruction by disease, the menses stop. In the ovary, at regular intervals two morphologic and periodic changes occur, the ripening of the follicle and the formation of the corpus luteum. According to the investigations of Leopold and his associates, the idea was prevalent, that all processes, at the time of the menses, come with the bursting of the follicles, but this has been modified somewhat. Fraenkel, after a series of histological and clinical investigations, came to the conclusion, that the menses are ushered in, not by the ripening follicle i. e. ovulation but by the corpus luteum, and that the menstruation begins at that moment in which the yellow body has reached its full development. Exact histological studies upon the different phases of the development of the corpus luteum by several German research workers have proved that, not as was formerly supposed, the menses started with the bursting of the ripened follicle i. e. menstruation and ovulation occur synchronously, but that ovulation occurs in the interval, ca. ten days before the menses are ushered in. Then a corpus luteum is formed in the cavity of the ruptured follicle, which yellow body, when it has reached its full development, ushers

in the menses by means of a hormone that it, the corpus luteum secretes. So that the former statement, without ovulation, no menses, must be modified to read, without ovulation, no corpus luteum formation, without a corpus luteum, no menses.

Besides this power of causing the appearance of the menses, the corpus luteum has another power, that is to promote the ripening of the ovum and to prepare the uterine mucosa for the reception of the fertilized ovum. To speak for the moment chronologically this is what happens every month during the life of the female from puberty to the menopause. A follicle ripens and at its full development bursts and discharges the ovum into the abdominal cavity. This is ovulation. In the cavity of the follicle a corpus luteum is formed that at its full development ushers in the menses. Then the corpus luteum begins to degenerate even before the menses stop. Certainly by the end of the second week the corpus luteum will have taken an hyaline appearance and the so-called corpus ablicans is formed. Soon or in a few days another follicle starts to ripen and the above process is repeated.

If the discharged ovum become fertilized, then the corpus luteum formed does not usher in the menses, but prepares the uterine mucosa for the reception of the fertilized ovum and aides in the formation of the decidua and placenta. This has been most admirably demonstrated by the researches of Leo Loeb. He could show that the development of the decidua is dependent upon the presence and function of the corpus luteum. He was successful, in guinea pigs and rabbits, by external stimuli, such as scarification of the uterine mucosa, by the placing of a glass rod in the uterus, etc. in producing a formation of an artificial decidua, providing a yellow body was present in the ovary. Loeb explained the mechanism in this manner, that a hormone is produced in the corpus luteum which renders the uterus sensitive. The premenstrual swelling of the mucosa, which histologically bears a great resemblance to the true decidua, takes place through the action of the false corpus luteum or corpus luteum spuriousum. With cessation of the function of the corpus luteum, and the entrance of the menses, the beginning decidua retrogrades and disappears. If the ovum is fertilized, then the corpus luteum remains longer in action and the decidua develops and later the placenta.

The function of the corpus luteum verum or true corpus luteum does not continue through the entire pregnancy. According to the careful and painstaking investigations of Seitz, the atrophy and retrogressive change of the corpus luteum of pregnancy begins slowly, probably about the middle of the third or beginning of the fourth month. In the later months, the degeneration increases to such a degree from distention and enlargement, that at the end of pregnancy, no trace of the former yellow body can be made out except perhaps the resulting hyaline scar.

After the fourth month of pregnancy, when the corpus luteum ceases to functionate, it is supposed that its work is taken up by the interstitial gland which has no doubt been formed to take up the work of the corpus luteum, even before the latter has ceased to functionate. The interstitial gland of the ovary is supposed, according to the two French investigators, Bouin and Limon, who first discovered and described this gland, to spring from atresic degenerating follicles. It is according to some not developed in the same way in all animals nor at the same time in the same animal, is its period of development the same. It is, however, agreed by all, that the most complete development is during the latter months of pregnancy. The small, faint, thin spindle shaped cells of the theca interna of an atresic follicle becomes thicker, larger, more voluminous, oval or pointed, their protoplasm contains many fat droplets and often shows a light yellow color. From the lutein like characteristics, they are called thecalutein cells. These cells,, arranged radically and longitudinally in ornate groups, surround the still preserved follicle space with a broad band of cells containing fat. It has also been observed that the older the pregnancy, the better developed is the interstitial gland. This gland is well developed in the hydatid mole, which as is well known arises from a proliferation of the syncytial and of the Langshans cells. It is also found in the chorio-epithelioma.

Seitz, who has reported at length on the internal secretion of the ovary, in a monograph read before the 15th German Gynecological Congress upon the relation of all the endocrine glands to pregnancy, comes to the following conclusions, as regards the ovary.

1. The internal secretion of the ovary plays an important part in determining the sexual characteristics of the female.

2. The corpus luteum ushers in the menses and prepares the uterine mucosa for the reception of the fertilized ovum.

3. It is important to note whether, in women who are prone to abortion, the fault does not

lie in imperfect development of the corpus luteum.

4. The function of the corpus luteum comes to end in the first third of the pregnancy.

5. In the later months of pregnancy there developes an organ called the interstitial gland which takes up the work of the corpus luteum.

It must be remembered in this somewhat hasty review of the anatomy and physiology of the internal secretory apparatus of the ovary, that no attempt has been made to treat the subject exhaustively. The desire is to simply pave the way for the more practical part of the paper, as indicated by its title.

While many investigators have been much occupied with the physiology of the ovary as an internal secretory organ, almost all have, more or less been working to obtain the active principle, as has been done in some of the other endocrine glands, e. g. the adrenals. This question has been attacked in many ways with about as many varying results. Up to most recent times, the ovary has failed to yield the active principle of its internal secretion. The writer has been more or less aetive in this work for the last eight years and only recently has he met with any success. In fact up to the present time practically no results have been obtained therapeutically, except with the desiccated products. The first step was to prepare the whole ovary by careful handling and administer it as a dried product. Next the corpora lutea were separated and dried at body temperature and given in capsules of 5 grains, one-half to one hour before meals. During the last year a water soluble powder was obtained from the corpus luteum, and as far as we have been able to judge, this will be a great advance in the determination of the chemical contents of the active principle of the ovary or the corpus luteum.

The long and laborious processes by which this is accomplished will not be discussed here as most of you are more anxious to hear the indications for its use in every day practical medicine.

The most common condition in which some form of ovarian material may be used, is the troublesome symptoms of the menopause, either artificial or natural. The usual complaints are flashes of heat or cold, insomnia, nervousness, etc. It is surprising what alleviation of these troublesome and unpleasant disorders can be accomplished by the use of desiccated corpus luteum, properly administered. A report of research cases will be found in another paper, written some years ago. One great advantage in this medication, is that it does not do any harm if no relief is accomplished. As far as can be learned from the use of soluble product, relief may be obtained in less time, with fewer doses and a relief that will be more permanent than with the dried gland. Perhaps the action of the gastric juices has some effect upon the efficiency of the product. At all events it is always better to use the active principle, where it can be obtained, than to trust to the action of the entire gland with its varying amount of inert substances.

From what was said above about the function of the corpus luteum being able to usher in the menses, the use of either the desiccated product or the soluble extract is often productive of good results in amenorrhea or in scanty menstruation. Seitz working with the corpora lutea of beef ovaries was able to isolate two antagonistic bodies which he called luteo lipoid and lipamin. The former was found, by animal experiment and clinical observations, to possess blood inhibiting characteristics and subcutaneously injected before and during the menses, to lessen the flow and shorten it. The second body, lipamin, a lipoproteid and a lecethin albumin, causes an increased growth of the external and internal genitalia in animals. In women, by subcutaneous injection, it will cause the menses to appear in amenorrhea. If the results of Seitz are correct as regards these two antagonistic bodies found side by side, so to speak, in the corpus luteum, it is no wonder that many times no clinical results are obtained when the entire gland is administered. Seitz explains the presence of these two bodies, possessing this antagonistic action in this way. Both these substances, luteo-lipoid and lipamin, are present in the corpus luteum, but at different times and in different amounts. In the young corpus luteum, the lipamin has the upper hand and the flow appears. Later the luteolipoid is present in larger amounts in the corpus luteum and the menses stop. If this assumption is correct, then it must follow, that in the young corpus luteum there is more lipamin and in the older gland more luteolipoid. This was proved by Seitz and his coworkers by histo-chemical and by quantitative chemical methods. Hence in order that the menses may appear regularly, be of proper duration, and that the loss of blood may be of the proper amount, it is necessary that the time and quantity balance of these two bodies be correct. All this goes to show that until the active principle or active principles, if you will, of the internal secretion of the ovary are iso-

lated beyond peradventure of a doubt, that its therapeutic use will be more or less problematical.

Before summing up the therapeutic possibilities of the ovarian secretion, a moment will be taken to give you an abstract of case that occurred at the Maine Agricultural Experiment Station at Orono, Maine. This case was reported by Pearl and Surface under the title "The assumption of male secondary characteristics by a cow with cystic degeneration of the ovaries." A pure bred Ayrshire cow had produced three calves in September, 1909, in September, 1910 and February, 1912. After March, 1913, the cow never gave any milk. The udder rapidly shrunk to a very small size and the animal began to show the external characteristics of a bull. After a lapse of eight months the general external facies and the behavior of the cow were like those of a bull to a remarkable degree. If the cow had been so screened that only her fore-quarters and neck were visible, any observer would have pronounced her a male, without question. The cow was killed February 18, 1914. Autopsy showed as the only gross abnormally a simple cystic condition of the ovaries. But, and here is a most important point, histo- and cytologically these cystic ovaries differed from the normal cow's ovary in but one essential point, namely, that they had no corpora lutea. In summing up this case, the reporters present the following:

1. This cow had been a perfectly normal female and had performed all the reproductive functions, both primary and secondary of the sex.

2. It later assumed certain of the secondary characteristics of the male, both in respect of structure and behavior with perfect definiteness, and so far as the character concerned goes, completeness. The change was like that following the castration and transplantation of gonads.

3. The gonads of this animal, examined subsequently, were exactly like those of a normal cow, save in one respect, that the follicles were not breaking and discharging ova, but were forming follicular cysts or becoming atresic and because of this no corpora lutea were formed.

This case shows that in the animal, a lack of corpora lutea formation, the female assumes the characteristics of the male. Perhaps here is another possibility for the therapeutic application of some form of the ovarian secretion in the human body.

In conclusion, perhaps it will be only necessary to mention some of the possibilities of the active principles of the ovary, when it is isolated in a pure form. Certain it is that the ingestion of the dried gland per ora is not without its objections. For can we be certain that, in whatever form given, the gastric juice does not alter or render it inert. So that, whether we try to alleviate the troublesome and unpleasant symptoms of the artificial or natural menopause, whether to cause the menses to reappear in amenorrhea, we must be sure that we are giving the internal secretion of the ovary in its proper form, at the proper time, and in the proper amount.

The question of infantile genitalia, of hyperemesis, of the correction of abortion, may be helped, bettered or even cured by treatment with ovarian secretion but this form must be worked out before any accurate data can be given. Also the question of interdependence or interrelation of the different endocrine glands must be studied in order to combat over function or hyperfunction of any of its members. It is comparatively easy, to prescribe for a lessened or hypofunction of the ovary, for example, but suppose for instance that the ovary is producing its internal secretion in too large amounts. It would, of course, be suicidal to give ovarian extract in any form. It would only aggravate the condition present. This is only one of the many problems that confront the research worker, who is busy with the internal secretions of the different members of the endocrine series.

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SINUSITIS—ACUTE AND CHRONIC

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In the lower animals where great dependence is placed upon the sense of smell, the nasal accessory sinuses reach a high state of development. In man, however, as this sense has become less and less necessary, these cells having gradually become closed off until in most instances the communication with the nose has been reduced to very small openings or ostei. It is very apparent therefore that inflammations of these sinuses becomes a very serious matter and that the severity of the pathological condition will, in large measure, depend upon the lack of drainage from these cells into the nose. In cases of sinusitis having large openings into the nose there will be an absence of the pressure symptoms and many of these cases will recover without treatment. These cases, however, having only small openings and these openings possibly closed by a swollen mucous membrane, may require the use of drugs such as adrenalin and cocaine or even surgical measures to secure the necessary drainage and ventilation of these cavities.

The keynote to the successful management of all these cases is "drainage" and our degree of success in every case will be largely in proportion to the efficiency of this measure. The etiology of sinusitis can be conveniently divided into constitutional and local. The constitutional causes are usually either syphilis or tuberculosis. Gummatous inflammations in these regions are not at all unsual and naturally must have constitutional treatment. Local measures are as a rule palliative only. Surgery has no place in these cases dependent upon syphilis and when inadvertently used frequently adds to the patients suffering and the tissues may be permanently damaged by such unfortunate treatment.

Tuberculosis is a very infrequent etiologic factor but when present must have both local and constitutional treatment.

Sinusitis may be caused by extension of the inflammatory process from contignous anatomical structures including the teeth, hard palate and outer wall of the nose.

You are all familiar with the frequency of infection of the maxillary antrum from carious teeth and this may take place through a carious fistula or by way of the blood-vessels or lymphatics.

Intranasal malformations such as deflected septum, enlarged or cystic middle turbinate or any other deformity causing obstruction to sinus openings may be the direct cause of sinusitis.

Inflammatory reactions following operations upon the nose may be the exciting cause. Nasal tamponing has been responsible for many cases and when used should be removed as early as possible always bearing in mind that drainage of the sinuses may become obstructed causing decomposition of secretions that cannot escape. Micro-organisms of course play an important role in these cases, conspicuous amongst them being those causing exanthematous and other infectious fevers. Coryza is recognized as an early symptom of these diseases and its dependence upon these micro-organisms is well known. Of the bacteria most often found as a causitive factor it has been claimed that the influenza bacillus holds first rank, the pneumococcus next, staphylococcus pyogenes aureus and albus and the streptococcus pyogenes. It is doubtful whether a pure culture will be found excepting in the beginning for after the defenses are broken down it is only a matter of a short while until it is a mixed infection. It has been claimed by some authors that in every case of influenza the sinuses become infected some time during its course.

The common cold or acute rhinitis is quite generally, even by the medical profession, looked upon as so inconsequential as to hardly merit serious attention or treatment. As an etiologic factor in its relation to inflammations of the nasal sinuses and otitis media there can be no question but that acute rhinitis is more frequently the cause of these inflammations than all other causes combined. Therefore the statement which I would ask you to remember even to the exclusion of everything else in this paper if necessary is "Beware of the ordinary cold in the head" for in it lurks possible complications and sequelae which may cause years of annoyance and suffering. In the virulent forms of infection acute inflammatory extensions into the nasal accessory sinuses, middle ear and mastoid may terminate fatally by means of meningitis or brain abscess. To further emphasize this statement I would say control the acute

rhinitis and a large majority of the cases of acute otitis media, mastoiditis, sinusitis and chronic rhinitis will not develop.

Sinusitis is a term which most general practitioners link up with the rhinologist and I fear in many cases pursue the subject no farther. In proof of this assertion I might mention a case of frontal sinusitis in my practice within the past year which had been in the hands of eight practitioners before coming to me. None had correctly diagnosed the case. At the time of my first examination of the boy, the symptoms of meningitis were well advanced. An operation was performed but the patient died about forty-eight hours later.

This boy suffered exposure at the time of the Ohio floods two years ago and contracted a severe cold for which he received no treatment until the sinus involvement reached alarming proportions. Then it was too late and the operation was performed simply as a measure of last resort.

A knowledge of the symptomatology and care in making diagnosis is necessary in the successful management in these cases.

Subjective Symptoms.—Headache is one of the commonest symptoms of sinusitis but because of its frequency in other disturbances, especially eye-strain, it must be differentiated from the headaches due to other causes. Since ocular anomalies are the commonest causes of headache I shall limit my differential diagnosis to these headaches as distinguished from headache of sinusitis.

Patients suffering from eye-strain usually start the day in good condition without headache. Continuous use of the eyes, however, brings on the pain in the head and this usually becomes more intense as the visual effort continues. Moreover the pain from eye-strain is usually bilateral. Another ocular condition which I believe to be frequently overlooked as a causitive factor in headaches is the condition of granulated lids. Many people are going the rounds of jewelry stores and physicians wearing glasses and taking drugs with little or no permanent relief, who need only to have local treatment to their lids.

The pain of sinusitis is usually unilateral though if very intense at times becoming bilateral. The pain is usually in the region of the sinus involved except in the cases of sphenoid or posterior ethmoid when the pain is vaguely deep seated or described as being in the occipital or frontal regions. When the frontal is involved, pain is elicited on pressure on the floor of the sinus toward the median line. When the anterior ethmoid is involved, pressure at the inner angle of the arbit gives rise to pain. The maxillary antrum is especially sensitive to pressure over the canine fossa. The subjective pain varies with the intensity of the inflammation, is usually worse at night and on rising in the morning. Redness, swelling and heat of the skin over the area affected are common symptoms in acute cases whereas in chronic cases these symptoms are seldom present. Giddiness and vertigo are frequently present and may be associated with momentary blurring of sight and a feeling of faintness. These symptoms and headache of sinus origin are usually aggravated by stooping forward or jarring of the body.

The intimate relation between the veins of the nose and accessory sinuses and of the eye shows how reasonable is the assumption that many ocular lesions heretofore attributed to auto-intoxication from the intestines, gonorrhoea, syphilis, and rheumatism may in many instances be due to an extension of the disease from the sinus to the ocular apparatus via the veins and lymphatics.

Auditory symptoms are not uncommon in sinusitis. Pus in the naso-pharynx may cause infection of the mucous membrane of the eustachian tube and middle ear with the possible result of middle ear catarrh or mastoiditis.

In addition to the foregoing symptomatology there are certain evidences and methods of examination which are valuable aids in making a diagnosis; pus in the nares; transillumination of skiagraphy.

Pus in the nasal chambers should always excite suspicion of sinus disease because the nasal mucosa alone is seldom the focal center of suppurative inflammation whereas the sinuses frequently are the source of such suppuration. Briefly stated, pus in the middle meatus usually has its source either in the frontal, anterior ethmoid, or maxillary sinuses, while pus coming from the upper meatus usually has its origin in the posterior ethmoid of phenoidal cells.

The accurate diagnosis of cells involved is largely a matter of exclusion and painstaking deductions. For instance, a case with pus in the middle meatus would indicate disease of either the maxillary antrum, frontal sinus or anterior ethmoids. Or it might indicate disease of a combination of any two or all three of the sinuses mentioned. On the other hand we must sometimes decide whether the maxillary sinus is actually involved in the sinusitis or whether it is simply a receptacle for the secretions of the sinuses higher up. The same may be said of the

anterior ethmoid into which may drain the secretion from the frontal. Or it may develop the ethmoid and antrum are both simply receptacles for discharge from the frontal.

When pus reappears in the nares immediately or within a few minutes after removal this is almost conclusive evidence of sinus disease.

As incidental to the foregoing remarks, the antrum or the ethmoid cells may contain pus and still not be involved in the sinusitis. The openings into the nose from these two sinuses is usually high up in their nasal wall so that the drainage from these cells does not occur until the cavities have filled up to the orifices.

Removal of the anterior portion of the middle turbinate is usually necessary in making this differential diagnosis. When this has been done, secretions from the frontal drain directly down into the nose instead of being directed backward into the ostei of the other sinuses. The best authorities are almost unanimous in the assertion that when frontal sinus disease exists the anterior ethmoids are similarly affected.

When pus is seen coming from the superior meatus we know that there is a sinusitis of either the posterior ethmoid cells or the sphenoid or possibly from both. The ostei to the cells are usually hidden from view by the middle turbinate bone and in making a diagnosis it often becomes necessary to remove the posterior half of this bone. Even then the openings are not always visible and much dependence has to be placed upon the probe. The openings into these sinuses are usually high up so that the cavities do not become drained until the pus reaches the height of the opening. We will assume that pus is seen exuding from the osteum of the sphenoid, the cannula is inserted and the cavity thoroughly washed out. The patient is placed in a recumbent position and as you will readily see this brings the point of drainage to the top of the cavity so that it would take a considerable time for sufficient pus to form to appear at the opening. After a half hour the patient is examined again and the absence of the pus in the nose would be very good evidence that the posterior ethmoid cells are not involved. The goal in all these cases is to trace the pus to its source and as you can readily see, in some cases it calls for a great deal of rhinological nicety. As a further aid to diagnosis "Transillumination" often furnishes us with valuable information. It is particularly of value in diseases of the maxillary antrum and frontal sinus; of no value at all in sphenoidal and posterior ethmoidal and of only questionable value in disease of the anterior ethmoid. A dark room is necessary for this test, but if this cannot be had a dark cloth thrown over the head of patient and operator may be used.

For examining the antrum, a small powerful light is placed in the mouth in a median position and patient told to keep mouth closed. A comparison of the two sides of the face should then be made to observe whether the transillumination is equally bright at all points. If one antrum appears dark and the other light it is fair to suppose that there must be some affection on the dark antrum. Furthermore the transillumination of the pupil of the intra-orbital ridge and the patient's susceptibility to light are all points of value in making this test.

For testing the frontal sinuses a lamp emitting light from the end only is necessary. The end of this light is placed firmly against the floor of the frontal sinus near the inner angle of the orbit and careful observations made of the light and dark areas. The lamp is then placed in the same corresponding position under the other frontal sinus and comparisons made. If one side seems darker than the other it is presumed that the dark side is diseased. Of course this test is not of great diagnostic value when taken alone but used in conjunction with the other means of examination it furnishes what might be called strong circumstantial evidence. The X-ray was primarily used in rhinology to determine the size of the different sinuses but of late years has been employed also as a diagnostic agent in determining the presence of pathological conditions.

As with transillumination the X-ray has not yet thrown much light on the sphenoid and posterior ethmoid sinuses. It is of particular value in frontal sinus cases because the size and contour of these cells are plainly revealed giving valuable information as to what to expect when these cavities are opened. In fact it gives one a complete picture of the topography including the anomalies before the primary incision is made. The X-ray has become almost indispensable in determining whether disease exists in the frontal sinus. This test is reliable of course only in those cases in which the disease is unilateral. In ascertaining the exact pathological condition of the sinus the X-ray has not been so successful. It is often difficult to say whether the shadow is due to hyperplasia, or purulent secretion though in other cases polyp or granulation tissue are said to be clearly discernable.

X-ray findings in the ethmoid sinuses have proved to be very dependable and of great value

in diagnosis and in determining operative treatment.

In diseases of the maxillary antrum we are less dependent on the X-ray because of the efficiency of the other tests. However, what has been said about the frontal sinus applies here also and when operative measures are necessary it is wise to take advantage of all available information that by being fore-warned we may be fore-armed.

Treatment of sinusitis of course depends upon the cause.

In simple acute catarrhal sinusitis reduce the hyperemia and swelling by means of adrenalin and cocaine and the action of these drugs can be prolonged by following up with menthol and camphor in olive oil.

The ischemia resulting from this treatment gives immediate relief and this technic can be repeated several times a day.

Sinusitis dependent on nasal obstruction and deformities of course usually requires removal of these lesions. For the badly deflected septum submucous resection has practically supplanted all other methods. Evolution in the technic of this operation gives us much more assurance of success than when first advocated and as practiced by Freer. Perforation of the septum is about the only unpleasant sequel with which we have to contend and the frequency of this undesirable feature usually diminishes in proportion to our experience.. However, if the operations have been otherwise successful in removing obstruction, relieving pressure of the septum upon adjacent tissues and re-establishing respiration through the nares, the presence of a perforation is of little moment as compared to the great benefit resulting to the patient.

Obstruction due to enlarged or cystic middle turbinate often causes sinusitis. After being cocainized the nasal chambers should be thoroughly explored by means of a silver probe which can be bent as desired. The topography of the parts under normal conditions must be constantly before us that we may be enabled to make proper deductions and comparisons. If there is evidence of sinus disease and the middle turbinate on the affected side is found to be enlarged and in apposition to the outer wall of the nose it would be not only justifiable but wise to remove a part or all of this turbinate. By this procedure more of the field is brought into view assisting in the diagnosis and making the different ostei more accessible, while at the same time the all important drainage is greatly facilitated. In fact many cases of sinusitis require nothing more in the way of treatment than removal of the middle turbinate.

In a paper of this general character no stereotyped rules can be laid down for the surgical management of these cases. There are so many variations in the etiology, and anatomical topography and *status quo* of the patients with sinusitis that each case is naturally a law unto itself and the treatment will depend entirely upon the conclusion of a careful differential diagnosis. However, in the acute cases a few general rules may be laid down for the medicinal care which are applicable in inflammation of any of the sinuses.

In the first place secure drainage and the best remedies we have for this purpose is adrenalin and cocaine, and it is to be used liberally adrenalin 1-8000, cocaine 2 per cent. Keep the patient warm and preferably in bed. Have him lie mostly on the unaffected side that the drainage from the sinuses may be facilitated by the influence of gravitation. Vaccine thereby has an important place in these cases and the stock vaccine is commonly used. As stated early in this paper if the infection started as a pure culture it soon becomes mixed and therefore some form of mixed vaccine therapy is indicated. Internally a free catharsis is indicated no matter how regular the bowel function may be. Rhinitis tablets may be safely used for the first forty-eight hours but should not be used indefinitely as they tend to interfere with the normal excretions and oftentimes only postpone or delay the natural course of the disease.

To recapitulate guard against the common cold and urge your patients to not neglect this ordinary affection. Keep in mind that a common cold should not last more than three weeks and when it has not cleared up in that time you are safe in assuming that you are dealing with some other pathological condition than a simple acute rhinitis. Try to trace the pus to its source, facilitate drainage and use vaccines. Surgical intervention is usually necessary in the chronic cases before a cure can be obtained but in these cases more deliberation can be exercised in making the diagnosis and outlining the surgical measures best adapted to each case. The acute cases may require surgical treatment also but this should be undertaken only by those who have especially qualified themselves to do this work.

I am not advocating the transfer of all these cases to the rhinologist but there are many danger zones in close proximity to the nose and its accessory sinuses and to do this work one

must be conscious of the anatomical and surgical limitations as well as a knowledge of what should be done.

A PLEA FOR A LARGER SURGICAL INSTINCT IN OBSTETRICS.*

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The great bulk of obstetrical practice today is in the hands of the untrained and unskilled in surgical technic. I doubt if in any other branch of medical practice such a wide difference exists as does between the practice of the professors of the art, and that of the great body of general practitioners.

We all know, and are willing to admit, that to practice obstetrics as it ought to be, requires a correct and substantial knowledge of physiology, pathology and surgical technic. The old saying that childbirth is a physiological process is, but a half truth and like all such, is more dangerous and baneful than a plain incorrect statement. When we consider that one-half of all confinement cases are accompanied or followed by accidents or conditions that either directly or indirectly jeopardizes the life of the woman, or consigns her to the role of an invalid, we will begin to have some just conception of the responsibility one assumes when the parturient woman places herself in our hands.

Moreover, I do not hesitate to say, that the vast majority of such accidents and conditions are surgical in their nature and require a surgical trend of mind to properly deal with them; and still further, such accidents and conditions are not in the great majority of cases handled in the same manner and technic as similar ones in other portions of the body.

Nor do I have at this moment in mind such grave conditions as rupture of the uterus, or those grave cases of dystocea, requiring symphysiotomy or Cesarean section, etc., for they naturally and by common consent belong to the surgeon. I am referring to the ordinary run of obstetrical work.

Let us ask ourselves this question: "What constitutes a successful obstetrical case?" Is it one in which the child is born alive and free from injury; one in which the mother remains alive and after a non-febrile period of from two to three weeks is in apparently good health, so as to be about as usual, and anatomically free from such defects or injuries which may become the cause of future illness? Do we attain, generally, such success? I think not.. Our books on obstetrics are written by men who practice obstetrics alone, or gynecology and obstetrics, and whose experience comes not so much from private practice as from large maternities over which they preside. If you will revert back to your student days you will find that the great bulk of material in those maternities consisted of young healthy primipara. The patient remains under observation from ten days to two weeks, and the end results are seldom or never known by the attending obstetrician.

Now, manifestly, morbidity and mortality statistics must differ in the most essential points from those which are obtained in private general practice. The material in the latter instance is different. It is composed of both primipara and multipara, and the latter far exceed in number the former. We shall find in those latter a far greater number of conditions which will lead to the so-called auto infections of former days. A sterile uterine cavity, together with a plug of mucus in the cervix and the vaginal bacillus, is found in only the exceptional cases. If you will take the trouble to look over your cases you will find endometritis, in some form or other, very common. On one or both sides of the cervix you will find in the vast majority of cases large pus-discharging lacerations. And should a little more careful examination be made, gonorrheal infection, either pure or mixed, can easily be scented. Introduce your two fingers into the vagina and you will immediately encounter a relaxed inlet, easily inviting the ingress of virulent bacteria. About every third woman will give you a history of leucorrhea, and every second of abortion, either accidental or with malice of forethought.

The mortality, therefore, in the former is lower; 1st, because the material is much more favorable, and 2nd, because their mastery of antiseptics is by far much more complete, and carried out with much more thoroughness than is done in private general practice. Too often are we lead to exclaim, when discussing obstetrics, "women have had children since the world began, and the danger attendant is very little anyway."

Now, as a matter of fact, with all the advancement made along the general lines of medicine and surgery, in the very face of the reduced mortality of all surgical operations and the widespread diffusion of the knowledge of antiseptics and septics—those most competent to judge claim that the mortality in childbed has not been reduced.

The morbidity statistics are well nigh value-

*Read before the Upper Peninsula Medical Society (Michigan).

less, for in a large majority of cases they have referred only to puerperal fever that did not end in death. But are puerperal fevers the only condition that arise from the parturient act that demand our attention and consideration in the complete restoration of our patient to a normal condition? Certainly not. This is a matter that is not sufficiently emphasized in the daily work of the general practitioner. Every laceration of the cervix or of the vagina, every fragment of placenta tissue, however small, may be the source of immediate trouble, or lay the foundation of a long train of symptoms and conditions that will end in continued ill health, or complete invalidism.

Subinvolution, metritis, endometritis, endocervicitis, vaginal prolapse, together with cystocele and rectocele, and last but not least, prolapses of the uterus, either partial or complete, any or all of these may be the result of confinement, and may not manifest themselves until long after the parturient act.

If we look at the average confinement case in the light of possible morbidity, the dangers attendant may become enormous; and this will be far greater in private general practice than in hospital work, for the personal equation of the men in charge of the maternities, standing over against those in general practice, must and will be the determining factors.

It is a self-evident fact—a statement requiring no proof beyond its mere assertion—that all departures from the normal in obstetrical cases, either grave or minor, are surgical in their nature. We maintain that a case where the child is born alive, the mother passed the three weeks period of her convalescence, without fever sufficient to be termed puerperal, a laceration which does not extend down to the sphincter ani, is not necessarily a successfully conducted one.

We maintain that a woman has a right to expect and demand more than this from her accoucheur. She has a right to expect to be left in such a condition that she will not suffer in the future. She has a right to expect and demand a uterus emptied and well contracted; no large cervical tear, or should it exist, that it be sewed; pelvic floor intact, or if lacerated, repaired with complete continuity; of the vagina restored, and no infection. It will thus be seen that something more than a "little soap and water," and leaving the rest to nature, is required.

Let our women be educated up to the fact that "anyone" is not good enough to conduct a confinement case, and we shall see the disappearance of the medieval midwife like snow before an April sun. Then and not until then will come the demand, born of a just appreciation, for men thoroughly trained in obstetrics; then and not until then will obstetrics be a specialty above the kindergarten conception of the term.

Let us take a given case: What, in the light of modern scientific procedure should be the mode of conduct?

1st. One should have a gynecological and general medical knowledge of the woman.

(a) Is there leucorrhoea? Is it gonorrhoeal?
(b) Does she have a large, relaxed vaginal outlet?

If the above conditions exist, then antiseptic as well as aseptic measures will have to be employed in the case. In other words, an effort must be made to separate the septic from the aseptic cases.

In the septic cases the patient must be prepared as for a vaginal operation. In the aseptic cases no vaginal disinfection should be attempted; examination must be made as infrequently as possible, but frequent enough to ascertain the progress being made. Abdominal palpitation should be relied upon in making the diagnosis of presentation and position, which should be made in every case. It is poor comfort for one to know that he has a face presentation after it has rotated to the hollow of the sacrum.

We do not believe that the second stage of labor should be allowed to continue too long. If progress is not being made we would apply the forceps without hesitation. We should not forget that prolonged labor produces shock and general depression, which in turn is conducive to lowered vitality and resistance, which favors the spread of infection.

In latter years we have always placed the patient upon a table when forceps were to be applied or version performed. It is well nigh incomprehensible how the proper technic can be otherwise carried out. In this way the perineum can be more easily and effectually protected, and should post-partum hemorrhage supervene it can be more easily controlled.

The placenta in each and every case should be inspected, and if any portion be found missing, the hand should be introduced into the uterus and the strayed portion removed. We are perfectly aware of the holy horror that will attend the uplifted hands of many at this statement, but the hand that is not fit to be introduced into parturient uterus, if need be, should be unceremoniously excluded from the lying-in-chamber. There are worse things to have in a

uterus than an aseptic hand, and this fact must not be lost sight of in all obstetrical work. Failure in this regard is a common cause of endometritis, hemorrhage, subinvolution and sepsis.

The genital canal must be inspected in every case. A superficial examination oftentimes shows an intact perineum so far as the skin union is concerned, when a complete separation of the vaginal tract would show extensive lacerations.

Then again, we shall meet with a form of laceration which in itself would not be classified as a tear. We refer to that peculiar condition not often recognized because unlooked for, viz: Where the perineal muscles give way during the expulsion of the head without a solution of the continuity of the tissue, whereby a tear can be occularly demonstrated.

Large cervical tears should be sewed at once. All lacerations of the vagina should be sutured. and a most careful search made for lacerations of the pelvic floor.

If left untreated, the woman will be subject to rectocele, cyctocele, and all the inconveniences which follow a relaxed vaginal outlet.

It is not considered within the province of this paper to discuss the comparative values of the different operative procedures, which become necessary in the different individual cases. Neither to recommend or describe the operations which may be necessary to restore the parturient woman to her normal condition; but rather to end as I began, with a plea for a larger surgical instinct in obstetrics.

There are many things that might be said of very great importance to the parturient woman, but they refer to her medical rather than her surgical treatment, and therefore do not properly fall within the scope of this paper.

If we are to judge from obstetrics as "she is practiced," then verily as a scientific branch of medicine it is a "lost art." Even the teachers of this branch teach it incidentally and rely on gynecology for their living. What man in this society today can afford to take obstetrical cases at ten dollars per, if it were not for the prestige in the family, neighborhood or community, that it gave him in getting other practice.

More than 90 per cent. of the physician's broken rest comes from his obstetrical engagements. Men grow prematurely old sitting by the bedside waiting for the "head to be born," or become rheumatic lying on three chairs, waiting to be called by old Mrs. Brown, when the head passes over the perineum. And while we believe that the time has come when not only a plea but a demand should go up from the profession for a larger surgical instinct in obstetrics, let us not forget the fundamental cause of the present conditions. First, there is not enough attention paid to practical obstetrics; Second, the compensation is so very small that men cannot give the time and attention to those which they demand, if we are to pull them up out of the slough, mud and mire of mere midwifery.

Prof. Parvin, one of the best obstetricians this country ever boasted of, got for his highest fee $100.00, after the bill had been sent back with the complaint of over-charge. The largest fee that we can learn of for obstetrical service was paid in New York—$300.00 and $10.00 per visit after.

When we as physicians place obstetrics upon a higher plane financially, then and not until then, will better work in this line be done. Then and not until then, will the general public realize that while "having a baby" is a physiological process, it is, nevertheless, attended and followed by pathological conditions which, in the vast majority of cases, lay the foundation for ill-health in after life.

CASE REPORT.

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That the case here reported was of such a peculiar nature and exhibited such a variety of peculiar and unusual symptoms is the only excuse for a detailed report.

Mr. A. L. B., a native American, age 63 years.

Family History.—One sister died of cancer of stomach, one of chronic stomach trouble—diagnosis not otherwise made—and a niece of cancer of breast and face.

Personal History.—Negative except about three years previous to present illness he suffered a paralysis of the left third facial nerve causing diplopia which cleared under anti-rheumatic treatment.

Present Trouble.—Sept. 29, 1914, he complained of cough which was worse at night and pain and tenderness in sixth and seventh left intercostal spaces; tires easily and had shortness of breath on slight exertion, appetite poor, sleep disturbed by cough, bowels constipated, temperature normal, pulse 72, respiration 24. Has had cough and pain for one month. Urine dark color, gave white band with Heller's test, microscope showed red blood cells but no casts. He had been losing weight and strength.

Oct. 7.—Urine cleared, he had pain in left arm,

dullness found at base of left chest, feels "all done out."

Oct. 12.—A tender lump found in axila of left arm, veins in left arm and left side of neck were dilated and engorged.

Oct. 15. Left chest solid to the fourth rib. Left arm, face and neck swollen, blueish in color and painful. An exploratory aspiration of the chest was negative.

Oct. 23.—Dr. P. M. Hickey of Detroit took a radiogram which gave a solid shadow in all but a very small area at the apex of the left lung. The trachea and heart were pushed beyond the sternum to the right, otherwise right chest was apparently normal. The upper margin of the dark shadow did not change position with a change in the position of the patient and a diagnosis of a neoplasm of the left plura was suggested. The patient was quite exhausted by the trip to Detroit (a distance of 80 miles) and on reaching home was confined to bed until Nov. 6, when his cough was less and he could sit up a little.

Dec. 18.—His left chest was becoming more resonant in some areas but was still dull or solid in others. The swelling of left arm, face and neck was subsiding but the veins were still engorged.

Jan. 1, 1915.—He began complaining of pain in the right chest which was found dull at base. The veins in the left arm, which was considerably larger than its fellow, were now solid like whip cords.

Jan. 4—An exploratory aspiration in right axillary line at sixth intercostal space was negative.

Jan. 5.—Mr. B. went to the University Hospital at Ann Arbor where he remained until Jan. 20. The following letter gives the findings at that clinic:

"Mr. L. B. was recently discharged from this clinic and showed the following:

"Laboratory examination was practically negative. The signs in his chest were those of old pleural thickening on the left at the base with emphysema and chronic bronchitis due to tension of the pleural bands. On the right there is a pleural effusion which was tapped several times. The pathology of this condition was not ascertained. At no time were tubercle bacilli or other organisms demonstrated in the numerous sputum examinations. There was nothing in the exudate to indicate the etiology. Wassermann examination was negative.

The treatment of the case is that of tuberculosis of the lungs, although the apices are not involved. This could well be tuberculosis. In our opinion it is not due to malignant disease in the pleura or lung. This is based upon the fact that the effusion is not bloody and the patient has no anemia or are there other evidences of a primary tumor. Prognosis is fairly good.

Jan. 24.—I aspirated about 2½ pints of clear straw-colored fluid from right chest, passing the needle at lower angle of the scapula. There was pain now on right side of head and neck, the right sterno-mastoid muscle being prominent and tender.

Jan. 31.—There was swelling of testicles, scrotum and penis with great pain in region of bladder. Urine was passed voluntarily and no residual urine was found on catheterization.

Feb. 7.—He complained of pain in stomach and vomited.

Feb. 9.—Had a severe pain in head after a nap and seemed dazed for a short time.

Feb. 12.—What appeared to be a typical facial erysipelas developed on bridge of nose and both cheeks but there was no elevation of the temperature and I may add here, that the temperature was never found to be above normal during the whole course of the case.

Feb. 28.—He complained of gripeing pains in the bowels. There was considerable tenderness in lower left abdomen where the skin was dark and mottled appearing and the underlying structures felt firm and resistant.

March 1.—This area was now bulging and very ender and a wave impact could be distinctly felt on percussion.

March 21.—Blood again appeared in the urine. There were many red cells but no casts. He also had an epistaxis in the morning and marked dysponea.

March 31.—He had constant pain in abdomen and there was an oozing of blood from the glans penis. This seemed to come from the unbroken mucous membrane covering the glans.

April 2.—Dr. David Inglis saw the case in consultation but no satisfactory diagnosis was arrived at other than a progressive inflammation of the serous membrane with marked tendency to bleeding. Prognosis guarded but rather favorable.

April 4.—There was marked dizziness on changing position in bed and general muscular tenderness.

April 11.—There was a good deal of pain in both kidneys with bulging and a semi-fluctuating sensation to palpation.

April 16.—Abdomen was greatly distended with gas. Mind was cloudy, hallucinations with picking at bed clothes. (1 cc pituitrin relieved this distention).

April 22.—A loud musical pericardial friction rub was heard over the apex and was not transmitted with blood current. Pulse rate was now, for the first time 100 to 110, urine very scanty averaging about 10 oz. for the 24 hours.

May 7.—Abdomen very tender throughout but not distended.

May 14.—Pericardial pain was intense. There were large petechial spots, which were elevated, at tip of nose and other parts of face and neck; a pressure sore was developing over sacrum.

May 15.—He died at 9:00 p. m.

An autopsy was held May 16, at 6:30 a. m. Dr. H. A. Bishop assisting. Rigor mortis present. Body greatly emaciated. Thoracic and abdominal cavities were examined. Peritoneum dull, injected and lusterless. Intestines moderately distended with gas, no feces in small intestines, the colon contained several small fecal concretions. Sigmoid small and empty. The appendix was small, short, non-adherent and slightly clubed. Great omentum short, puckered, thickened and friable. Stomach small and empty, pyloric end adherent to under surface of liver. Mass of adhesions at site of

Common duct closing it. Gall bladder moderately full, no gall stones found. Liver, spleen and pancreas apparently normal. Kidney small, soft, granular and mottled, surface studded with pinhead-sized nodules some white and some clear.

Bladder contained about one ounce of urine, walls thickened, peritoneal surface covered with granulations and a fibrinous exudate which brushed away with sponge. No enlarged lymphatic glands nor tubercles discovered anywhere. Pericardium thickened, surface dull, contained no fluid. Heart about normal size, plaque of fibrinous deposit on anterior surface at apex size of dime. Post mortem blood clots in heart cavities. Valves normal. Organized blood clots (antemortem) adherent to endothelium vessels near the heart. Lungs did not collapse on opening chest cavity. Plurae greatly thickened throughout, was firmly adherent in some areas but not in others. In the nonadherent areas the plural cavities were filled with fluid. On the left side this fluid was clear, on the other chocolate colored. The cavities thus formed were lined with plura which was very tough—almost cartilaginous—bands of this extended across from lung surface to chest wall dividing the cavities into many connected compartments of irregular shape. In the left thorax the principal cavity was anterior while in the right it was posterior. Where the lung was adherent it required much force to free it and in doing so the lung tissue would tear and break down. This torn surface was dark colored with black tracings. The lung tissue was very heavy. The right kidney, some lung tissue with plura attached, a piece of omentum and clots from inside the large blood vessels were sent to Ann Arbor for microscopical examination.

Pathological Report:

"Dear Doctor:

"We received the autopsy material on Mr. A. L. B. which you so kindly sent to us and have the following pathological report on same.

"Chronic fibroid pneumonia, marked anthrocosis, bone formation in the dense connective tissue of the lung, metastatic adenocarcinoma in the lung and bronchial lymph node. Considerable of this tumor suggests hypernephroma.

"Kidney.—Papilliferous adenona in kidney cortex. Chronic pyelonephritis. Malignant hypernephroma."

In the clinical report of this case I have neglected to report the recession of the various symptoms stating only their appearance and degree of development and wish to add here that many of the manifestations disappeared as some other appeared or that they would merge the one into the other.

It is also of interest to note that no primary tumor was found either during life or at autopsy although careful search was made for one. It is to be regretted that more material was not submitted to a pathological examination to determine the extent of the dissemination of the malignancy.

A review of the symptoms involving as they did nearly all the anatomical structures of the body and a study of the pathology found suggests the possibility of a general systemic malignancy without a primary tumor.

Diagnosis of Female Disorders.—Manufacturers of "Uterine wafers," etc., often advise the use of their preparations without physical examination of the patient when patients are disinclined to submit to such physical examination on the chance that one of the asserted constituents of the proprietary may hit the cause of the trouble. In this connection the testimony of J. Clarence Webster, professor of Obstetrics and Diseases of Women in Rush Medical College, Chicago in the "Wine of Cardui" case is of interest: He was asked: "Is it necessary to make an examination of the female pelvis in order to determine the condition, the underlying cause of the condition and the treatment which is necessary?" He replied: "It is necessary. Because from symptoms one can rarely have any accurate idea of the pathological conditions in the body, in this part of the body. There are many symptoms which are common to different conditions and consequently it is necessary in analyzing a case to make a careful physical examination." Again, when asked "Can you determine, or can the conditions of the uterus, or pelvic organs be determined merely by attention to description of symptoms which a patient gives?" he replied "I cannot" (*Jour. A.M.A.*, April 22, 1916, p. 1337).

Controlled Clinical Trials.—At the "Cardui" trial which is now in progress, A. S. Loevenhart, Professor of Pharmacology and Toxicology at the University of Wisconsin, testified as to the conditions under which the clinical trial of a medicine would give results as certain as those yielded by the usual pharmacologic methods. Professor Loevenhart had testified that he preferred his students to be familiar with drugs the value of which had been clearly worked out by accurate clinical methods and shown to be useful in the treatment of disease. Asked as to the character of the clinical trials required to demonstrate the value of a drug, he held that there was no difference between a careful clinical test and a careful pharmacological test. Loevenhart explained that to determine if Wine of Cardui had the claimed action as experimenter would take a certain number of cases of amenorrhea, perhaps 50, and divide them into two sets; treat 25 with Wine of Cardui and the others without it and then make an estimate of the amount of the material passed at the time of the menstrual period. Such trials carried out in a hospital, where the physician receives his reports from nurses and is not obliged to depend on the statements of the patients, he explained, would be as reliable as a properly conducted pharmacologic experiment (*Jour. A.M.A.*, April 15, 1916, p. 1219).

TRANSACTIONS

OF THE

Clinical Society of the University of Michigan

Stated Meeting, April 5, 1916

The President, UDO J. WILE, M.D., in the Chair
Reported by REUBEN PETERSON, M.D., Secretary

DEMONSTRATION OF A CASE OF PHAGADENA.

UDO J. WILE, M.D.

(From the Clinic of Dermatology and Syphilology, University Hospital, Ann Arbor, Michigan).

The case I wish to demonstrate is a most unusual complication of genital infection, a type we fortunately do not see very often any more but which at one time was exceedingly common. It is in no way a specific infection. It is a phagadena complicating a genital sore. By phagadena is meant a destructive, almost gangrenous process which advances with great rapidity. Bacteriologically it is due to a symbiosis of a number of very virulent organisms, associated with saprophytes. Phagadena, therefore, can complicate syphilitic chancre, and chancroid. A few cases of phagadena are on record complicating simple gonorrhea and not a few complicating a bite.

The question of etiology of phagadena always brings up the possibility of sexual perversion of one type or another. I saw within the last three months a case of extensive phagadena of the penis following a bite of the glans in which there was no syphilitic infection, and still another in which a chancre complicated the bite. The process usually progresses with great rapidity. The amount of destruction is extreme. Hemorrhage, indeed fatal hemorrhage, may occur from erosion of large vessels. In women, phagadena usually invades the thigh and in cases of complicated chancroid the entire anterior surface of the thigh may be involved in an extensive gangrenous slough.

The case which we present tonight (Figs. 1 and 2) is that of a man who exposed himself one month previous to his marriage which occurred two months ago. He denies, however, that the intercourse was in any way unusual or perverted. After marriage he developed a sore on the foreskin which extended very rapidly. The sore progressed so that at the present time it has involved, as you will see by the photograph, and as I shall show you by the patient himself, the entire superior surface of the glans penis and has laid open the superior margin of the urethra. After the ulceration had extended as far as it had when he entered the Hospital, it was difficult to say what the man had besides phagadena, whether the underlying process was syphilis, chancroid or a single bite, or some other form of infection. However, there are two points to be considered in the differential diagnosis. One is the relative painlessness of this process when it is associated with syphilis. One would assume that such an extensive ulceration would give rise to excruciating pain, and it usually is so unless it accompanies a chancre. The second point of diagnostic importance is the amount of induration present. The anterior lip of the penis was firm and hard and the characteristic induration of the chancre remained. The proof of the nature of the process really was established by the man's wife who presented herself with a typical secondary syphilid of the vulva and an eruptive syphilid of the body. That confrontation, the wife having an ordinary syphilis, is the best proof that there is nothing specific in the syphilitic virus itself to produce phagadenic infection, and that such infection is a secondary one.

The results of treatment are strikingly favorable considering the amount of destruction which takes place. In this case I would say that it would be inconceivable for the patient to have a perfect result without a plastic operation because with the urethra laid bare as it is on the superior surface, scar tissue must

result, which will certainly result in stricture so that it may be necessary to produce in this patient an artificial hypospadias. He now has an artificial epispadias, as the meatus is about an inch away from the ulcerated part of the upper surface of the urethra. I hoped Dr. Loree would be here to discuss this phase of the case. It would seem to me that the stricture would



Chancre complicated with phagadena. Lateral view.

be too firm to dilate and, therefore, it would be necessary to make an artificial meatus.

As a complication one should consider the possible cystitis and ascending pyelonephritis which might occur. Such cases as this have even been mistaken for epithelioma and the entire penis occasionally has been amputated together with complete dissection of the lymph glands.

Case 2. A case of sarcoma of the thigh treated by the X-ray, followed by general sarcomatosis.

This case is one of more than usual interest, I think, from many aspects, particularly from the aspect of the general surgeon and dermatologist. The patient whom I shall present in a moment, I was asked to see by Dr. Darling a year and a half ago. He had on the under surface of the right thigh a circular tumor, fungating, perfectly round, about the size of a pancake and five inches in diameter. It bled easily, was attached to the skin by a very thick pedicle, somewhat broader at the margin than at the base, of a peculiar bluish color where it was attached to the skin and extremely firmly attached to the underlying tissue. At that time I suggested that the case was either one of sarcoma or infective granuloma. The mass had grown very rapidly and the question came up as to what form of surgical interference should be instituted. It seemed to me that if the tumor mass were a sarcoma then it was far too late to think of any surgical interference which could be of the slightest benefit. Amputation would have been the only possible operation which might have been thought of. A simple excision, of course, would have been useless, but amputation might have been carried out with every chance of a failure. On the other hand, if the lesion were an infective granuloma certainly one would not wish to amputate, and the danger of excising such a growth where the diagnosis was in doubt is obvious. I therefore recommended that the patient be given X-ray. He was X-rayed with the most satisfactory result so far as the original lesion was concerned. It completely disappeared and left a linear scar much as though an operation had been performed. One year and a few months later the diagnosis is substantiated by the appearance all over the body of metastatic nodules, dark purplish red in color, some of them colorless, varying in size from a grain of sand to the size of a large walnut, associated with a fairly



Chancre complicated by phagadena. Exposed dorsal surface of urethra shown near distal end.

marked cachexia and with the picture of general sarcomatosis.

General sarcomatosis of this type always presents itself in exactly this way as non ulcerative (in metastases) relatively painless tumors, being painful only where they are subjected to constant trauma and having a very grave prognosis. It is particularly interesting to note that the X-ray to-day if applied to any of these

tumors for one or two exposures, causes them to disappear but they reappear in a few days, and keep on coming.

Histologically these tumors are either the large or small round cell types, or they are of the angiosarcomatous type, being made up of blood spaces with the radiating sarcoma cells arranged around. In this particular type I felt that the tumor was an angiosarcoma because of the apparent vascularity of the tumor masses. However, I was incorrect in this. The microscopic picture shows it to be a very marked large, round cell sarcoma with beautiful kariokinesis.

This is not the only type of general sarcomatosis which occurs in the skin. One type is the idiopathic pigmented sarcoma or hemorrhagic sarcoma. This begins in the extremities, has a very marked racial distribution, occurring almost exclusively among the Galician Jews, and among men. There are about 100 cases on record. This racial distribution has been somewhat shaken in the past two or three years by the demonstration of this type of sarcoma in native-born Americans.

The tumors in the case before you vary in size from a grain of sand to a walnut. They are infiltrated into the skin above but are freely movable below. The back is one mass of these tumors. One would have great trouble in counting them. The patient feels perfectly well. The viscera are always involved later as well as the skin. One characteristic of this form of tumor is the frequent metastasis to the choroid and retina leading to very early disturbances in vision. That has not occurred in this case. The extremities seem to be somewhat more involved than the trunk, but the tumors extend all over. The X-ray plates of the lungs are absolutely clear.

DISCUSSION.

DR. HARRY B. SCHMIDT: You mentioned metastases into the choroid. Are there any in other organs?

DR. WILE: Yes, they metastasise everywhere in the body.

DR. HAROLD DE BLOIS BARSS: I had more or less charge of this patient while he was in the surgical ward last year. At the same time that he was given this X-ray treatment, we started a stiff course of Coley's serum. I wish to give our roentgenologist due credit for his work, still so many cases are on record of improvement in cases of sarcoma of this type that I think we should take this into consideration. It may have been the X-ray which did all the work, but we have had several cases in our own service and the literature mentions many cases in which excellent results are being obtained by the use of the serum. Dr. Darling has a similar case now in private practice which he is treating with Coley's serum and he is getting at least temporary improvement. It would be interesting to find out whether Coley's serum in this case would affect the metastatic tumors.

DR. WILE: He has been given Coley's serum on the outside without any effect.

A CASE OF CONSTITUTIONAL SYPHILIS ASSOCIATED WITH AN HALLUCINATORY MENTAL STATE.

ARNOLD L. JACOBY, M.D.

(From the Psychiatric Clinic, University of Michigan, Ann Arbor, Michigan).

The separation of the mental disorders of syphilitic origin and those mental states associated with constitutional syphilis into various classes has gone hand in hand with our modern methods of examination, particularly the laboratory tests. These disorders, other than general paresis, have been variously classified by different writers. Kraepelin in the last edition of his psychiatry classifies these disturbances partly on the pathologic and partly on the clinical basis and our case this evening would probably fall into the group of cases which he calls syphilitic pseudoparalyses. This group is further subdivided into the cases of simple dementia, expansive forms, Korsakow-like forms and the delirious forms of which our case is an example.

This man, E. B. is 37 years of age, a Canadian by birth, single, a farmer by occupation, who has received a common school education. He was brought to the Hospital by his family because they noted an acute mental change in him a week previously. He said jungle animals were after his cattle and he prowled about at night with a shot gun after them. He said everything was charged with electricity and that he collected it all. He talked rationally at times but was often abstracted and at times his actions were bizarre.

His family history is of no interest. His past history, however, is of greater importance. As a child he was always rather delicate and apparently not of the same mental capacity as his brothers and sisters. After his school days he led a very purposeless life, following almost every sort of occupation from time to time. Ten dollars a week is said to have been his average wage, although his brothers did much better. His habits were extremely irregular. He contracted syphilis at 21, that is, sixteen years ago, and shortly after had a severe gonorrhea. There were rather mild secondaries and it would seem that he received mercury irregularly for about three years following his in-

fection. About ten years ago, while a member of the Printers' Union in Detroit, he was called out on a strike. He then expressed ideas that spies were after him and became much disturbed. The family then sent him to his home where he remained on the farm until his admission to the Hospital. At home it was noted that he acted unusual in that he did his work very irregularly. He often would not start the day's work until four in the afternoon and spent much time abstracted and in so-called "brooding." The family, although they noted these things, overlooked them until the sharp change which occurred just before admission. Upon admission he was completely disoriented and showed a marked retentive memory defect. His manner was consistently pleasant, always greeting us cheerily on each visit, but unable to recall ever having seen us before. He said he remembered having left his home in northern Michigan on a Sunday but he did not know how long ago Sunday was. He remembered the depot and he "guessed" the Hospital was the depot. He told us of voices talking to him but did not elaborate upon these. He was observed at times wandering about the ward nude and oblivious to his surroundings and occasionally was seen in an attitude of prayer.

His physical examination was negative, except for a slight enlargement of the liver. He was well formed and of average size. The pupils were unequal in size, and dilated, measuring about 5 millimeters and 6 millimeters. They were somewhat irregular and sluggish in their reaction to light. They reacted in accommodation normally. There were very prominent tremors about the mouth and of the tongue on protrusion, and a slight inequality was noted in retraction of the lips, the right side drawing back further than the left. The deep reflexes of the arms were very prompt. The right knee jerk was diminished, the left one absent and both Achilles were absent. There was a definite articulatory speech defect but elisions of syllables or words were not present. There was a loss of sense of position in the two middle toes of both feet with the loss of ability to localize touch in these same toes. There were no other sensory changes. The urine and the blood count were negative. The Wassermann on his blood was ++++. A lumbar puncture revealed two cells per cubic millimeter. Nonne-Apelt, Phase 1 Pure ±, and with a dilution of two negative. Nissl-Esbach reaction showed the quantitative albumin to be .0175 per cent., which is within normal limits. Lange's colloidal gold test was negative and the Wassermann on the fluid was negative. The differential blood count showed 30 per cent. of mononuclears, 68 per cent. polynuclears, 1.6 per cent. eosinophiles and .4 per cent. mast cells.

After about three weeks in the Hospital, his mental condition began to improve and his memory returned, until now it is very difficult to demonstrate a memory defect. He was indifferent and mildly apathetic. He showed very little concern about his mental condition and frequently became very irritable when questioned. He felt that the experiences before coming to us needed no explanation, "they just happened like lots of other things in my life," and it was foolish and unnecessary for us to ask about them. It was noted at this time that he had no definite articulatory speech disturbance, although his voice was tremulous. Otherwise, the neurologic examination was the same as upon admission.

He was put upon salvarsan and mercury. There was a general physical improvement but there has been little change in his mental state recently. On the whole, he remains indifferent and apathetic, occasionally telling us of his particular attraction for electricity and cites many examples to prove his contention. He says that no explanation is necessary for this, it is simply a property peculiar to him. There is always a latent irritability, which shows itself when we attempt to question him more than he feels that we should. There is now no evidence, clinically, of any progressive organic deterioration. His attitude on the ward strongly suggests occasionally that he is hallucinating, but he will not tell us about it. A lumbar puncture done recently showed the pressure to be normal, 6 cells to the cubic millimeter, Nonne-Apelt Phase 1 Pure +, and in a dilution of two negative. The Nissl-Esbach estimation showed .04375 per cent. albumin which is very high. Wassermann negative. Unfortunately, the Lange test was not done. The left knee jerk, which was absent upon admission, can now be obtained upon re-enforcement, but the knee jerks are definitely unequal and the Achilles absent.

We must consider these definite neurologic findings as evidence of involvement of the central nervous system, either past or present. In view of the cerebrospinal fluid findings, which are practically negative except for an increase in the albumin content, it appears that there is an impairment of the central nervous system

and that the process is no longer an active one. Although the neurologic findings may suggest the presence of a tabes dorsalis, the laboratory findings do not bear out this conclusion unless we consider that a tabetic process has existed and has now become inactive.

Plaut in his monograph on the "Hallucinosis of the Syphilitic" (Monographien aus dem Gesamtgebiete der Neurologie und Psychiatrie Alzheimer and Lewandowsky, Heft 6) has classified these disturbances into acute and chronic forms. The acute forms are further subdivided into those occurring in secondary, tertiary, and in the late stages. These classes differ essentially in the time of appearance of the mental symptoms. This case may fall into the latter division. Two cases of this class are reported by Plaut who found positive Wassermanns on the blood, and no increase in the cell count of the cerebrospinal fluid in each. The Wassermann on the fluid was also negative in ordinary amounts, but positive in one case in increased amount.

The acute disturbance at the time of this man's admission to the Hospital was not unlike an hysterical dream state. Ilberg has reported a case (Ein Fall von Psychose bei Endarteritis luetica cerebri, *Zeitschr. f. d. Ges. Neurol. u. Psych* 2, 1 1910) of cerebrospinal lues of endarteritic type which showed many hysterical states throughout the course and at autopsy the specific endarteritic changes were demonstrated. During the second month of our patient's residence in the Hospital he was extremely suggestible and it was very easy to put him into light hypnosis.

The neurologic findings, memory and speech disturbance at first, together with the positive Wassermann on the blood, might make the diagnosis of general paresis seem very apparent. However, the cerebrospinal fluid findings and the course of his disease are very different from those of paresis and the prognosis is of course much better.

DISCUSSION.

DR. UDO J. WILE: I should like to ask Dr. Jacoby whether a general paresis could be definitely ruled out on the absence of the cerebrospinal findings. Some very interesting work has been done in connection with the spinal fluid findings in general paresis in a large insane asylum, I believe in the Middle West, where it was found that without any treatment at all there were great fluctuations in the fluid findings from week to week. In some of them the fluid returned almost normal, so it would be impossible to say whether the fluid was definitely involved. It would seem to me that this might be a possibility which would have to be kept in mind, that this case might be one in which the spinal fluid findings were held in abeyance, in which case it might be a general paresis. Were it not for the matter of slight danger to the patient, it would be very interesting to do a puncture and examine his grey matter for spirochetes. It would certainly clear up the diagnosis if there were any question as to whether it might be a paresis or not.

DR. JACOBY: It is very true that cases have been reported in this country, from Hopkins particularly, of a very definite paresis in which the cerebrospinal fluid findings were absolutely negative. However, the patients had all received intraspinous treatment. The more important thing in this case is the extremely long duration of his condition and absence of definite signs of organic deterioration. For a paretic it is all out of keeping with our teaching. His mental symptoms began ten years ago and were of a paranoid or hallucinatory type, and he has never been right since, although he was able to support himself and father and mother in the restricted community in which he lived. His syphilis is sixteen years old. I think that probably at autopsy this man would show definite blood vessel changes in his brain, but not the true paretic process, and certainly not that of a meningitis.

A CASE OF MULTIPLE PREGNANCY WITH ECLAMPSIA; ABDOMINAL CESAREAN SECTION WITH RECOVERY.

RUDOLPH A. BARTHOLOMEW, M.D.

(From the Clinic of Obstetrics and Gynecology, University Hospital, Ann Arbor, Michigan).

A statistical study of any considerable number of cases of eclampsia, will bear out the fact that this complication is much more likely to occur in cases of multiple pregnancy, and that the percentage incidence of multiple pregnancy is several times as great in a series of eclamptics than in an equal number of normal pregnancies. To quote from, "A Consideration of Vaginal Cesarean Section in the Treatment of Eclampsia based upon a study of Five Hundred and Thirty Published and Unpublished Cases," by R. Peterson; *American Journal of Obstetrics*, Vol. LXIV No. 1, 1911, the author concluded. "Multiple pregnancies are much more common among eclamptics. Twins are four and a half and triplets ten and a half times more frequent in this complication. Therefore, multiple pregnancy probably acts as a contributory cause of eclampsia." The following case is of interest, not only as a further illustration of this feature, but on account of the treatment of the condition.

The patient, V. D. Obstetric number 1314, nullipara, age 22, entered the Maternity Hospital January 27th, 1916, about seven months advanced in her first pregnancy. Past history negative except scarlet fever at 9, and diph-

theria at 14 years of age, with good recoveries. The last normal period occurred May 15th to 23rd, 1913; fetal movements were first noticed about the middle of November and were always very active. There had been no more than the normal amount of nausea and vomiting early in the pregnancy and no symptoms of toxemia. It is of interest to note that there was a history of twin pregnancies on the paternal but not on the maternal side. The patient's physical examination was negative, except that the abdomen seemed larger than could be accounted for by a single fetus at that stage of pregnancy. Palpation revealed multiple pregnancy, one child presenting by the head as an O. L. A. and the other by the breech as an S. R. P. The diagnosis of twin pregnancy was rendered certain by the presence of heart sounds corresponding to these two positions. When auscultated simultaneously by different observers, the rates were never found equal but differed as much as seventeen beats per minute. An X-ray was taken and two fetal skeletons distinctly demonstrated. The patient's blood pressure was 125, and the pelvic measurements were normal.

Pregnancy continued normal and uneventful, the urine showing no trace of albumin on any of the weekly examinations. On the afternoon of February 15th, the patient complained of rather severe headache, swelling of the ankles and spots before the eyes. She had noticed these symptoms for two days but had not thought it worth while to mention them. The blood pressure was taken and found to be 160, and a specimen of urine obtained at once, showed a heavy test for albumin and a moderate number of granular casts.

She was put to bed at once on a milk diet and given a liberal dose of saline cathartic. All urine passed was saved and the patient was closely observed for the development of further symptoms. She slept very little that night on account of headache, nausea and occasional vomiting. During the fifteen hours, from 3 p. m. to 6 a. m., about fifty ounces of urine were voided, and the Esbach showed one and a half grams of albumin per liter; the sediment revealed only an occasional granular cast. The bowels moved very freely during the night. In the morning the headache became very intense, worse over the left eye, and she complained of seeing large balls of fire before the eyes. The nausea and vomiting became more severe but the edema was less noticeable than on the previous day. There was no marked epigastric pain, but during the morning there was a rapid failure of vision in the left eye so that the patient was unable to count fingers held before that eye. The pulse was noticed to be intermittent and irregular, and the blood pressure was now 210.

It was only too evident that the patient's condition was becoming worse very rapidly. While the treatment of the case was being discussed, the patient was suddenly taken with a typical eclamptic convulsion. A consideration of the various features of the case pointed to abdominal Cesarean section as the most favorable method of treating the case, inasmuch as the patient was a nullipara, nearly full term, with a rigid undilated cervix, due to the fact that there had been no labor pains as yet. The patient's condition was so serious that slower methods of delivery, such as packing, introduction of a rubber bag, or even manual dilation, and extraction were manifestly contraindicated. Furthermore, the risk to the twins in the longer method of dilatation and extraction would have been much increased due to continued convulsions of the mother during the delayed delivery, trauma of extraction through a rigid undilated birth canal, and the possibility of locking of the fetal heads, since one was a breech, and the other a cephalic presentation. The patient was a good risk for Cesarean, inasmuch as there had been but one convulsion, the membranes were intact, and there had been no vaginal examinations. The toxemia could be lessened during operation by permitting bleeding from the wound, and replacing this with saline subcutaneously.

The abdomen was prepared with iodine and the patient was ready for operation at 1 p. m., about one hour after the first convulsion. Very little ether was required as the patient was so profoundly toxic. A median incision was made by Dr. Peterson extending about three inches above and below the umbilicus and the uterus incised without delivering it through the wound. The twins were quickly and easily delivered and cried at once. They were both males, each weighing about six and one-half pounds. The placenta was then separated with the membranes and was found to be single with a cord arising from opposite sides. The uterus was allowed to bleed freely during the repair and saline was given subcutaneously. There were five convulsions in all, four before delivery, and one during the operation.

The patient was returned to bed with a pulse of 60, and reacted in several hours, and seemed entirely rational. The vision in the left eye returned rapidly and was apparently normal the same evening. It was found necessary to

cleanse the vagina with iodine and pass a sound up the cervical canal about seven hours after operation on account of absence of drainage, apparently due to an adherent shred of membranes or clot. This was successful and there was the usual amount of drainage thereafter. The recovery was uncomplicated except for a slight infection of the abdominal incision, which developed about the fourth day and was opened and drained for a few days, ultimately healing well. The urine cleared very rapidly and albumin and casts were absent after the fifth day. The blood pressure gradually returned to normal, and the patient was discharged in good condition.

With a knowledge of the decidedly increased susceptibility of cases of multiple pregnancy to the development of eclampsia, it is of great importance to see that such patients are more carefully observed during pregnancy, and instructed to report any symptoms suggestive of toxemia.

DISCUSSION.

Dr. Howard H. Cummings: The subject of eclampsia is always an interesting one, because we know so little about its etiology. When Dr. Bartholomew started to read the case history it occurred to me that the case reported might be one of nephritic toxemia. This patient had eye disturbances and headache early in the disease which points more to a nephritic than an eclamptic condition. However, after operation the symptoms and signs cleared up too quickly for a nephritic toxemia.

Vaginal Cesarean section for eclampsia has been advocated by a few men for the past fifteen years, and recently this method has gained in favor. However, in a primiparous woman, with a rigid cervix, trouble is sometimes encountered. Abdominal Cesarean section in clean cases seems preferable.

In spite of the vast amount of research work that has been done on eclampsia we have in the literature to-day perhaps forty theories as to the etiology of this disease, but the cause is not known. This much has been learned, that the sooner the uterus is emptied after the beginning of eclamptic convulsions the better for the patient and child. Abdominal Cesarean section in primiparous women accomplishes this. In multiparous women vaginal Cesarean section is extremely satisfactory.

Dr. Ira D. Loree: I would suggest that you do a functional kidney test upon all your cases of eclampsia. If the functional kidney test is below 10 per cent. for a two hours sample of urine, send a sample of blood for an estimation of its urea content. You will find that in some of these patients who are passing large amounts of urine the urea content of the blood is very high.

Dr. Bartholomew: I might say that on a case that occurred last fall we did a urea content on the blood. It was a case which resulted fatally with very profound toxemia. The urea content as I remember it was very little if any above normal. It was .5 and that is the upper limit of normal, I believe.

I should like to ask Dr. Wile whether there is any connection between the very high blood-pressure and the very intense itching of the skin the patient complained of.

Dr. Wile: No, I should say that it was analogous to the pruritus which sometimes occurs in association with nephritis, and particularly with the old nephritic cases in which there is a retention of urea and urea in excess in the sweat. This accounts for irritation of the skin, a very high content of urea and other salts as well in the sweat.

OBSERVATIONS ON THE TENDENCY OF THE DIPHTHERIA BACILLUS TO LOCALIZE IN THE UPPER RESPIRATORY TRACT AND THE IMPORTANCE OF THIS FACT IN ROUTINE CULTURE WORK.

Damon Orian Walthall, B.S.
(From the Department of Pediatrics and Contagious Diseases, University of Michigan, Ann Arbor).

In the culture work at the Contagious Hospital a definite, routine method is followed in passing the swab or platinum loop over the mucous membrane of the upper respiratory tract, and as much of the mucous membrane is touched as is possible. It is not always possible to select one particular spot, where the organisms might be expected to be more abundant.

The contagious hospital intern takes all cultures except the routine cultures at the Contagious Hospital which are taken by the nurses or the students on the section. Several demonstrations of culture taking always precedes their doing this work.

Because of past experiences in finding that the organisms of diphtheria may be present in the larynx and absent in cultures taken from the nose and throat, or positive in the nose and absent in the throat and so on, at the suggestion of Dr. Cowie I have made a number of observations with this point in view.

Of the eight cases which I wish to report upon, the organisms confined themselves to one locality—Group I—in five cases; to more than one locality—Group II—in three cases.

GROUP I.

Case I. Marian Y., age 20, entered the Contagious Hospital service January 5, 1916—laryngeal diphtheria. General culture in this case taken in the beginning of the illness, January 2, 1916, was negative. The organisms were present in cultures taken directly from the larynx until January 4, 1916. After this cul-

tures were taken from the tonsils and pillars, the pharyngeal wall, lateral bands and from the nose. They were always negative. Total cultures 24, covering a period of twenty-eight days—antitoxin 10,000 units intravenously, 20,000 intramuscularly.

Case 2. Ernest D., age 23, entered Contagious Hospital February 29, 1916—clinical laryngeal diphtheria, mild. Organisms were present in cultures taken from the larynx, always absent in cultures taken from the tonsils and pillars and from the pharyngeal wall and lateral bands and nose. Total cultures 28, covering a period of sixteen days. Antitoxin 10,000 units intravenously.

Case 3. Ione O., age 25. Clinical uni-tonsillar diphtheria, marked. Entered February 8, 1916. Diphtheria organisms were always present in cultures taken from the right tonsil, always absent from cultures taken from the left tonsil and pillars, the paryngeal wall and lateral bands and from the nose. Total cultures 32, covering a period of eleven days. Antitoxin 10,000 units intravenously, 10,000 units intramuscularly.

Case 4. Luella S., age 21, marked clinical diphtheria of the lateral bands. Entered February 25, 1916, with positive general cultures Janury 26th and 29th. Special cultures began February 1st. The organisms were at all times present in cultures taken from the pharyngeal wall and lateral bands, but were never found in cultures taken from the tonsils and pillars and from the nose. Total cultures taken 25, covering a period of twenty days. Antitoxin 10,000 units intramuscularly, 10,000 units intravenously.

Case 5. Ruth W., age 21, carrier. Entered the Contagious Hospital December 2, 1915, nose bleed two weeks before. General throat culture negative, nasal culture positive. Nose and throat cultures taken simultaneously always showed organisms in those taken from the nose, but never in those taken from the throat. Total cultures 30, covering a period of twenty days. The patient was discharged from the Hospital after three negative cultures, which terminated December 22, 1915.

She returned to the Hospital with positive general throat cultures March 18, 1916, after which special cultures were again instituted. It was now found that a positive culture was always obtained from the pharyngeal wall and lateral bands, but never from the tonsillar fossae or from the nose. (This patient had an adenoid and tonsil operation previous to her first entrance to the Hospital). Total cultures taken 27, covering a period of twelve days. Patient is still under observation. Schick test is negative.

GROUP II.

Case 6. John S., age 2, carrier. Entered the Hospital February 9, 1916. This patient has hare-lip and cleft palate, enlarged tonsils and visible mass of adenoids. General culture positive February 13, 1916 and continued so until March 16, 1916 when special cultures were begun. Positive cultures were now confined to the tonsils and the visible mass of adenoids. They were never positive when taken from the nasal mucous membranes. Total cultures 24, covering a period of thirty-eight days. Patient still under observation.

Case 7. Harry S., age 29, carrier. Entered the Hospital February 16, 1916 with facial erysipelas. General culture was positive on February 27, 1916 and continued to be so until March 13, 1916, when special cultures were started. The organisms were now present in cultures taken from the pharyngeal wall and from the pharynx, taken *per os,* but were never found in cultures taken from both tonsils, anterior nasal passages, both right and left, or from the external auditory canal. This patient had been operated upon for mastoid a few days before entering the Contagious Hospital. Positive cultures were obtained from the mastoid wound on three different days. Patient still under observation. Total cultures taken 36, covering a period of thirty-eight days. It may be of interest to note that a long type of diphtheria organism is present in this case. It has been thought that these organisms are more virulent than the short ones.

Case 8. Sarah S., age 4, clinical nasal diphtheria December 22, 1915, which cleared up in a few days without any antitoxin. The patient was detained because of exposure to chicken-pox before entering the Hospital. General routine throat culture was positive January 26, 1916. Special cultures were begun February 2, 1916. They were taken with a swab. Those from the tonsils and pillars, pharyngeal wall and lateral bands were always positive while those from the nose were always negative. The tonsils in this case were so large that it was impossible to reach the pharynx with a swab without touching them. A stiff platinum loop was substituted for the swab. February 11, 1916. The cultures were now positive from both tonsils and negative from the pharyngeal

wall and nose.. Total cultures taken 48, covering a period of seventy-five days.

CONCLUSIONS.

1. All parts of the mucous membrane of the upper respiratory tract must be touched in making a satisfactory general culture.

2. The pharynx may be cultured and be negative for Klebs-Loeffler bacilli, but the organisms may be present in the nose or in the larynx and thus not be found except by special technic in culture work. Nose bleed and hoarseness or loss of voice should attract attention to the nose or larynx.

3. Sterile cotton swabs are found to be most adaptable for getting culture material from all parts of the upper respiratory tract. Second in preference for culture taking is a platinum loop. The platinum wire must be quite heavy and stiff in order to prevent its curling and bending. It can be used only in taking cultures from tonsils, pillars, posterior pharyngeal wall and lateral bands. It cannot be used in taking nose and laryngeal cultures because of danger of trauma to the mucous membrane.

4. Several cases in this series show the necessity of having more than one or two cultures to determine that diphtheria organisms are absent from the upper respiratory tract. In this Hospital at least three negative cultures are required before a patient may be discharged or before a nurse can return to the main Hospital for service.

5. This interesting and peculiar tendency of the diphtheria organisms to localize to one part of the upper respiratory tract should be an important factor in deciding upon a surgical or a medical treatment to eliminate the organisms from this part.

DISCUSSION.

DR. CARL H. LAWS: With regard to cultures taken by the students of the sections and by the nurses I would like to say that one student is selected from the section and is instructed in the technic of taking cultures. The nurse in charge of the ward is also thoroughly instructed before being permitted to take routine cultures.

It is an interesting and important point to find that a patient may have a laryngeal diphtheria and the cultures from the nose and throat be negative. That means that a laryngeal culture should always be taken when laryngeal diphtheria is suspected.

DR. JOHN A. WESSINGER: Dr. Walthall's paper is a very interesting one to me on account of the position which I occupy as city Health Officer. During the year the number of swabs that come into my hands run into the hundreds, by no means all being positive. Some very interesting things have occurred in this line of work. I might go back quite a number of years and point out some things. I remember, it is now over ten years ago, two very prominent physicians in the City of Ann Arbor got into a very awkward position over a case which proved to be laryngeal diphtheria. Physician one diagnosed it as negative; physician two diagnosed it as diphtheria. There were no cultures taken. The child died and the autopsy showed extensive tracheal and laryngeal involvement with diphtheritic membrane and cultures from the larynx and trachea were positive, while cultures from the upper respiratory tract were negative. I can see, of course, some difficulty in getting antemortem cultures from the larynx. We haven't attempted that. We get them from the nose and throat. My instructions are to get them from every part of the upper respiratory tract, because there is no doubt but that the diphtheria organism tends to localize itself. It may be on one tonsil and not on the other. It may be in the nose and not in the throat. That to me from a public health viewpoint is important, and the most important question is the carrier and how to get rid of the carrier. That is a problem which has confronted us more than any other one thing. A little over two years ago we undertook an investigation here in the city on account of an outbreak of a number of cases of diphtheria at the Tappan school. We examined about 175 children and out of this number found twenty-one carriers. Four of these were nasal only. The remainder were throat, tonsils and pharynx. We had a good deal of difficulty in clearing up the nasal cases.

That leads up to the best method of getting rid of the carrier. There are three or four different viewpoints along this line. There is a man in Cleveland who has brought out something very interesting lately. He says the only thing to do is tonsillectomy and adenoid operation, while some equally able men in Chicago say that that is not necessary and that the same work can be done just as successfully chemically, and they do it with kaolin. Then there is another class of men who rely upon bacillary methods, a bacillus which is antagonistic to the Klebbs-Loeffler bacillus. I believe that there will be some day a bacillus found which will destroy the Klebbs-Loeffler bacillus. Some believe that the lactic acid bacillus does that. I recall an outbreak at the Mayo hospital where six nurses became infected with diphtheria and the men in charge were at a loss to know how the disease got into the hospital. They found that the chef was a carrier. Dr. Wood, the health officer of Rochester gave me their technic in getting rid of the organism. A great many men claim that all that the lactic acid bacillus does is to hide the diphtheria organism and that afterwards the original organism is just as virulent. So far as our limited observation goes that does not hold. I recall a student who had a very virulent pure culture of diphtheria. He wasn't very sick but was advised very strongly to go to the contagious ward. He was furnished with a gallon of sour milk the night before he went to the Hospital and the next day there was no diphtheria bacilli in the throat and we had him under observation for three months and there were no Klebbs-Loeffler bacilli to show up. Evidently pretty *effectually* covered up.

When Dr. Canfield does a tonsillectomy there will be no more diphtheria in the tonsils, and when he does an adenoid operation there will be no diph-

theria there, but I want to say that I see a good many throats where tonsillectomies have been done that are still very capable of developing diphtheria organisms in them. People say, "How is it, doctor, my tonsils were removed?" The fact is they were not removed. They were cut in two or shaved off. When a tonsillectomy is done correctly it is all right.

As far as kaolin goes, one man says that it is very valuable. All that is necessary is to blow a little of it into the throat and it will destroy the organism. Another body of men say that it does not do it. So I think after all that a good tonsillectomy will get rid of the carrier, and so will an adenoid operation, but it seems to me that what we are coming to eventually will be the bacillary route.

Hewlett of London and Wassermann have both brought out an endotoxin by which they hope to destroy the bacillus. So it will either depend upon the bacillus direct or an endotoxin or some other preparation to do the work.

I may say a word in passing relative to the lactic acid bacillus. We had great trouble in preparing a spray which is sufficiently concentrated to do the work, so we simply whipped over to the ordinary sour milk and had the patients use that. By this method we attained negative throats and noses in from ten days to two weeks and there has been no case of diphtheria in the Tappan school since. In the past year we have only had three outbreaks in the city. The year previous to that we had seven and farther back it ran very much higher. You would be surprised to see the number of people that are using sour milk in this town. If it has no other value, it is a good food and can do no harm.

Dr. Alvin Lorie: In St. Louis we have had two frightful outbreaks with over 6,000 cases of scarlet fever and diphtheria and it has been rather difficult to turn these patients loose carrying the organism of diphtheria. We have used kaolin to quite an extent. It is a mechanical remover. It never acts unless you absolutely apply it thickly to every part of the mucous membrane. You can't do that by blowing it into the nose or mouth. Some of the children we have had swallow kaolin. In some of these cases it is marvelous the way the diphtheria will clear up. We have examined the kaolin after it has been removed and it was simply loaded with bacteria. It simply acts as a mucilage to take up the germs and mechanically remove them.

Dr. R. Bishop Canfield: I would like to say one word with regard to the effect of adenoid and tonsil operations upon the diphtheria carrier. No matter how well the operation is done, it does not remove all the tissue of the nose and throat which forms a suitable resting place for the bacteria. There is the rest of the lymphoid ring in which infection takes place quite as often as it does in either the tonsil or adenoid. Probably the infections which occur in the adenoid and tonsil, especially the tonsils, are more virulent than those occurring in the more superficial lymph tissue, the crypts of which are more superficial than they are in the adenoid and tonsil. These infections which occur in the parts of the lymphoid ring other than the adenoid and tonsil are more easily diagnosed and are apparently more superficial. The local manifestation in the throat is more readily seen, at least it is seen more early in the course of the disease, and in this connection we must not forget that the lingual tonsil is a part of the lymphoid ring and it usually is overlooked in taking cultures. Consequently I have seen several cases of diphtheria of the lingual tonsil which had escaped detection when cultures had been taken.

It is a very satisfactory thing that our contagious diseases are being so carefully watched and that the investigation with regard to carriers of different infections is being so scientifically done.

LANTERN SLIDE DEMONSTRATION OF THE MONTH'S RADIOGRAMS.

James G. Van Zwaluwenburg, M.D.

(From the Clinic of Roentgenology, University Hospital, Ann Arbor, Michigan).

1. A case of cardiac, hepatic, and splenic enlargement in an infant, endocarditis.
2. Separation of the epiphysis of the internal condyle of the humerus.
3. Comminuted fracture of radius and humerus. Railroad accident.
4. Fracture through the trochanter major in a child.
5. Tuberculosis of the shoulder joint, with large sequestrum.
6. Tuberculosis of the tarsus.
7. Bony anchylosis of the knee, old pus joint.
8. Suppurative arthritis of the knee with gas bubble in the sinus.
9. Unerupted canine teeth in an adult.
10. Ulcer cicatrix in the duodenal cap.
11. Duodenal ulcer with "nieschen" and cicatrix.
12. Pelvic adherent appendix.
13. Peristalsis in an airfilled stomach, with duodenal ulcer.
14. Retrograde filling and dilatation of the duodenum, following pyloric resection and subsequent jejunal obstruction.
15. Extragastric tumor, enlarged liver.
16. Acute miliary tuberculosis.
17. Extensive chronic pulmonary tuberculosis.
18. Cavernous tuberculosis, "cured" twenty years ago, probably amyloid disease.
19. Traction dilatation of the trachea in tuberculosis, simulating cavities.
20. Mediastinal Hodgkins in a small boy.
21. Enlarged thymus disappearing under X-ray treatment. Leukemic metaplasia of thymus tissue.
22. Primary malignancy of the lung. Reduction of the mass under treatment.

23. Hypoplasia of the right arm. Photograph.

The case represented by slide No. 19 is of more than ordinary interest.

It was referred to us with the request that we confirm the internists' findings of a cavity in the right upper lobe. As not infrequently happens, we were able to demonstrate only an extensive fibrosis with consecutive distortion and dilatation of the trachea.

The danger of confusion of these two conditions seems not to be sufficiently appreciated. The underlying pathologic anatomy is perfectly clear, and it is logical to suppose that the air-filled trachea, brought near the surface and covered only by dense, well conducting tissue should give the classical signs of cavity, but I do not recall ever having seen or heard it mentioned in connection with the diagnosis of cavities.

In many cases the deviation of the trachea may be made out by palpation of the suprasternal notch, and a wide deviation should lead to the suspicion of tracheal dilatation rather than cavity.

The case represented by slide No. 13 is interesting as giving us a side-light on the motor function of the empty stomach.

We are rather under the impression that the normal empty stomach is at rest, except for the "stomach systole" associated with hunger-pangs. But we really know very little about it since we have no way of seeing what transpires in the empty stomach. It can not be shown by the radiogram and after the introduction of any instrument the stomach is no longer empty.

Here, however, the stomach is virtually empty, only a small amount of barium remains adherent to the wall, just enough to outline the gas filled cavity. It will be seen that there are four well defined and evenly spaced peristaltic waves along the length of the organ.

It should be remarked that this is not a normally behaving stomach, there being good evidence of a duodenal ulcer, with a reflex hyperkinesis, and this persistent peristalsis is probably another expression of the results of local irritation in the duodenum.

HEALTH NEWS.

Twenty-five out of every 1,000 employes in American industries, according to recent statistics, are constantly incapacitated by sickness, the average worker losing approximately nine days each year on this account. This "non-effective rate" for the great army of industrial workers in the United States barely suggests the total money loss to employers and employes. The lessened efficiency, the effects of reduced earnings in times of sickness, as well as the cost of medical attention, and the economic loss from deaths, swell the cost to industry and to the nation to almost incalculable figures.

That much of this loss is nothing less than preventable waste and that this waste can be largely reduced by a properly conducted system of governmental health insurance for wageworkers are conclusions set forth in Public Health Bulletin No. 76, containing the results of a study of "Health Insurance—Its Relation to the Public Health," just issued by the United States Public Health Service.

The preventive value of health insurance is given especial emphasis in this study. "Any system of health insurance for the United States or any State should at its inception have prevention of sickness as one of its fundamental purposes," says the bulletin. "This country should profit by the experience of European countries where prevention is being recognized as the central idea necessary to health if health insurance is to attain its greatest success in improving the health and efficiency of the industrial population."

Such a system, it is pointed out in the bulletin, would

1. Provide cash benefits and medical service for all wage-earners in times of sickness at much less cost than is now possible. Adequate medical relief would thus be placed within the reach of even the lowest paid workers who are most subject to ill-health.

2. Distribute the cost among employers, employees, and the public as the groups responsible for disease causing conditions and afford these groups a definite financial incentive for removing these conditions. This can be done by means of small weekly payments from employees, supplemented by proportionate contributions from employers and government at a rate reducible in proportion to the reduction of sickness.

3. Become an effective health measure by linking the co-operative efforts of the three responsible groups with the work of national, state and local health agencies, and by utilizing these agencies in the administration of the health insurance system.

4. Afford a better basis for the co-operation of the medical profession with public health agencies.

5. Eliminate the elements of paternalism and charity-giving by making employees and the public, as well as employers, joint agents in the control of this fund.

"A governmental system of health insurance," concludes the study, "can be adapted to American conditions, and when adapted will prove to be a health measure of extraordinary value."

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August.

Editorials

THE VALUE OF TUBERCULOSIS DAY.

The medical profession of Michigan, have in the establishment of their Tuberculosis Day, introduced a valuable weapon in the fight against this disease. The great value which has accrued from the information disseminated at that time is not manifested solely in the number of individuals who present themselves for examination.

We have reports of 430 cases examined on August 20th, 1915, these cases being distributed throughout thirty-nine counties of the State. It is our opinion that this represents by no means the entire number of people examined, as we have ascertained that many physicians did not return examination blanks in the case of normal individuals. The statistical information obtained of a purely medical character was invaluable, since the reports represented the work not of a single individual necessarily more or less prejudiced with regard to certain points, but the work of 117 different physicians throughout the State.

Questions such as the association of pleurisy and subsequent tuberculous disease, have never had more valuable statistics compiled. Among ninety-four cases who gave a history of pleurisy at some time in the past, seventy-one were found to be suffering from physical signs of pulmonary disease at the time of examination, and of these forty-four showed signs of activity as indicated by a rise in temperature and an acceleration of the pulse above normal. Could any more striking evidence of the tuberculous character of pleurisy either dry or with serous effusion be desired?

This year we trust that instead of reports from 117 physicians we will have reports from many more sources. We believe that many members of the profession are not fully alive to the value of this work and have not, as yet given it the co-operation that it deserves. It is a work which is of such magnitude that it can be done by no single individual, but its fulfilment depends upon the co-operation of every physician in our society.

The information which has been disseminated in connection with Tuberculous Day through the public press of the State has been the most potent factor in the development of preventive medicine. We are attempting to teach the public that the only way to maintain health is the periodic medical examination of the individual, and our Tuberculosis Day is a practical demonstration of the value of this fact. It must be apparent to every physician that the knowledge disseminated in connection with Tuberculosis Day is not limited to this particular disease. When individuals have learned the value of periodic medical examination, which can be taught best at first in a practical way, then indeed will the physician see the dawn of a new era, when he will meet nephritis, certain forms of cancer, anterio sclerosis, low sugar tolerance and the degenerative diseases generally at a stage in which he may still adopt the role of conqueror rather than that of the vanquished.

Governor Ferris has issued a proclamation setting aside August 10th as Tuberculosis Day of the present year. Your Committee hopes and expects that each member of the State Medical Society, insofar as possible will hold himself in readiness for the work of that day.

Please return your examination blanks at once in order that the results of our work may be tabulated in time for presentation at the Houghton meeting on August 15th.

TUBERCULOSIS COMMITTEE,
State Medical Society.

HEALTH INSURANCE

(Continued from last month)

INSURANCE CARRIERS

The principle of compulsion accepted, the insurance may be carried in any one of three ways: (1) by a state fund managed entirely by the state, as are workmen's compensation funds now existing in several states; (2) by approved societies, as in England; or (3) by district mutual associations, as in Germany. In case of either the first or the third, a place could be made for voluntary societies, and in the second a state organization of some sort would be necessary to cover the persons refused by or refusing to join the approved societies. The draft adopts the district mutual fund as the normal carrier, to which all insured persons must belong unless they are members of an approved voluntary society. This plan provides the most effective organization for combining employers and employees in a campaign for sickness prevention, and a most convenient and practical means for fixing rates and administering benefits. (Secs. 25-28.)

The state fund is open to both positive and negative objections. Its vast detail, the number of its officials, the very large sums of money which would be distributed among individuals insured, physicians, and supply dealers, the opportunity to favor industries, individual plants, and more especially localities, in fixing rates or paying benefits, would not only make its operation cumbersome and costly but would afford rich opportunities for political favoritism and log rolling. Negatively, the state fund would not develop the sense of responsibility of the people in each locality for the sickness of their district; it would not bring home to each employer and employee the consideration that the less the sickness and the less the fraud, in town or city or industry, the less would be his contributions or the greater his benefits; it would not create a strong local organization, locally responsible and well supplied with money to fight the causes of disease. The advantages of a state fund, the wider outlook of the larger organization with resultant better information as to means of prevention and of cure, the power to compel backward communities to keep up with the progress of sanitation, the co-ordination of effort of several localities in removing a cause of infection common to all, or greater ease in suppressing such a cause or infection situated in a locality other than that in which the result is felt, prevention of local oppression, co-ordination of effort in the betterment of legislation, readier exercise of the state's policy power, will all be gained by the state Commission provided for in the draft.

Administration by approved societies is open to the negative objections urged against the state fund, and to many that are positive. It is not worth considering in the United States, at all events, until evidence, at present lacking, is brought forward to show that there exists a frame work of voluntary societies, fraternals, trade unions, establishment benefit funds, strong enough and widely enough extended to support the insurance. Other objections to this method of administration are the consequent multiplication of accounts, difficulties of administration, and supervision of the societies, objections on the part of the societies to state supervision, both in the granting of benefits and management of funds, and the necessity for a separate organization for medical relief which would divorce the physicians from any relation with the insurance carriers; all tending to complicate a system that should, as far as possible, be simplified.

While in the plan adopted local funds including in their membership all the insured persons in the district are the normal carriers, funds for various trades are provided to meet conditions in cities in which the large number of employees in each of several trades forms a sufficient basis for insurance. This plan will make the various mutuals less cumbersome, and will automatically take care of the troublesome question of the varying contributions among industries, according to their various rates of sickness. All funds are democratically governed by the contributors—employers and employees—whose relative representation in the governing boards is proportioned to the amount of their contributions. The members of the fund, employers and employees, elect, each for their own class, the members of a large committee which in turn chooses a board of directors to manage the fund. The large committee serves a double purpose. Because of its size it puts on a great many individuals responsibility for the success of the fund, and it is a check on the directors, necessarily a small group, who are made responsible to a body which will inquire closely into their administration, instead of to the vague, general meeting of all members, frequently impossible to assemble on account of numbers and never effective. The system is adopted from the German law, and is similar to the ordinary procedure of large corporations in which the large representative

powers of directors are often delegated to an executive committee responsible to them, the directors themselves retaining only general administrative supervision of the business. (Secs. 29-34.) A place is made in the plan for labor unions, fraternals, or establishment funds, which are willing to pay at least the minimum benefits provided for, can show that they are democratically managed, are not run for profit, and are financially sound. Employers are not required to contribute to labor unions or fraternal societies, but the state's 20 per cent. contribution is given to them. (Secs. 38-40.)

When several societies or several funds are operating in a single district they may combine in a health insurance union for the administration of the medical benefit. This arrangement is necessary both in the interest of an efficient and economical administration of the medical benefit, and to secure the union that is strength in the local campaign for sickness prevention. (Sec. 41.)

A guarantee fund is provided as a sort of reinsurance for extraordinary losses. A great flood, an unusual epidemic, would impose a heavy toll on a local fund at a time when the resources of all of its contributors were strained to the utmost. The importance of help at such a time would be well worth the small charge necessary to support the fund, a prudent investment from a purely insurance point of view. (Sec. 42.)

Section 25. DIVISION OF THE STATE INTO DISTRICTS. The Commission shall, within six months after this act goes into effect, divide the state into districts, no one of which shall contain less than five thousand persons subject to compulsory insurance; and shall establish one or more local or trade funds in each district.

Section 26. AUTHORIZATION BY COMMISSION. No fund shall begin business until it is authorized by the Commission. The Commission shall authorize a fund only after approval of its constitution and after the names and addresses of the board of directors elected for the first year have been filed with the Commission.

Section 27. POWERS OF FUNDS. Funds shall have all the power necessary to the carrying out of their duties under this act.

Section 28. CONSTITUTION OF FUND. Subject to the provisions of this act, the constitution of a fund shall contain:

Name of the fund and vocation of its principal office;

If the fund is a trade fund, designation of the trade or trades for which it is created;

Maximum percentage of wages in each occupation at which the regular contribution may be fixed;

Nature and amount of benefits and length of time during which they shall be given;

Manner of election, number, powers, duties, and time of meeting of the committee;

Number, powers, duties, and time of meeting of the board of directors;

Method of amendment of constitution;

and such other provisions as may be directed by the Commission.

Section 29. COMMITTEE OF THE FUND. There shall be a committee of each fund which shall consist of not less than twenty and not more than one hundred members, to be elected annually in the manner provided in the constitution, one-half by and from the employer members of the fund, one-half by and from the employee members. The committee shall pass upon the annual account and report submitted by the directors.

Section 30. EMPLOYERS' VOTES. Each employer member shall have as many votes for employer members of the committee as he employs workmen subject to the insurance and members of the fund, except that no one employer shall have more than 49 per cent. of the total vote cast by employers unless otherwise provided in the constitution.

Section 31. BOARD OF DIRECTORS. The board of directors shall be elected by the committee for a period of one year. All directors must be citizens of the United States. The board shall consist of not less than eight and not more than eighteen directors, one-half of whom shall be elected by employer members of the committee, and one-half elected by employee members of the committee. No one shall be a member of the committee and a director at the same time. The compensation of members of the board shall not be more than $5 a day for each day of attendance upon the meetings of the board.

Section 32. RESERVE. Every local or trade fund shall accumulate a reserve. The board of directors shall transfer to such reserve one-twentieth of the annual income of the fund until such reserve is equal to one-sixth of the total expenditures for the preceding three years. The reserve shall be maintained at this level. Any surplus which may accrue from the investment of such reserve may be transferred into the general account of the fund.

Section 33. PAYMENT OF CONTRIBUTION. Every employer must pay to any local or trade fund on the date on which he pays his men, or at least monthly, the total contributions due from him and from his employees to such fund. He may deduct the sum paid as contribution due from each employee from his wages, but must inform him, in a method to be approved by the Commission, of the amount so deducted.

Section 34. MEMBERSHIP IN FUND. Every person subject to insurance shall be an insured member of the trade fund of the trade at which and in the district in which he is employed; or if there be no such fund, of the local fund of such district; provided that while he is a member of an approved society he shall be excluded by the board of directors from membership in the fund. The Commission shall provide by regulation for the case of

persons regularly occupied at one trade but temporarily employed at another. Membership in a local or trade fund shall cease as soon as the insured becomes a member of another local or trade fund. Any employer shall be an employer member of all funds of which any of his employees are members.

Section 35. VOLUNTARY INSURANCE. A person entitled to voluntary insurance must be admitted on application to membership in the trade fund of his trade in the district in which he is employed, or if there be no such fund, then in the health fund of such district: Provided, That, except for persons who have been compulsorily insured members within the last twelve months, the by-laws of any fund may prohibit the admission to voluntary insurance of a person who has not passed a satisfactory medical examination by its medical officers, and that the application for admission be subject to the same condition as an application for ordinary life insurance. The contribution of the voluntary member shall be equal to the contribution required of the employer and employee for a compulsory member of the same trade and earnings.

Section 36. LOSS OF VOLUNTARY MEMBERSHIP. A person voluntarily insured loses his membership if he acquire membership, either voluntary or compulsory, in another fund or society, or if he be in arrears for one month in the payment of his contributions, unless this period be extended by the constitution.

Section 37. FINES AND PENALTIES. Funds may fine their employer and insured members and suspend insured members from benefit for violation of their rules or regulations or for fraudulent representations made with the intent of securing or aiding another to secure benefits, in accordance with rules approved by the Commission providing for such fines or suspensions. If an employer fail or refuse to pay the contribution which he is required to pay under this act the carrier to whom they are due may recover the whole sum with interest at 6 per cent. by suit in a court of competent jurisdiction, and the employer shall not be entitled to deduct any part of the sum from the wages of his employee or employees.

Section 38. APPROVED SOCIETIES. A labor union. benevolent or fraternal society or an establishment society shall be approved by the Commission only after hearing the local or trade funds affected and only if:

It is not carried on for profit, but reasonable salaries paid officials shall not be considered profit;

It is under the absolute control of the insured members in so far as the insurance regulated by this law is affected, except that the employer may appoint one-half of the governing body of an establishment society;

It shall satisfy the Commission that it is in a sound financial condition.

It grants at least the minimum benefits provided in this act;

It has a membership of at least five hundred persons insured for at least the minimum benefits provided under this act or their equivalent, except that in the case of establishment societies in which the employer satisfactorily guarantees the payment of benefits, the number of members may be fixed by the Commission;

Its operation will not, in the opinion of the Commission, endanger the existence of any local or trade fund;

In case of an establishment society, a majority of the employees subject to insurance request approval, and the employer's contribution is at least equal to that of all the employees.

The approval of the Commission may be withdrawn at any time upon its finding, after hearing the society affected, that any of the required conditions are no longer satisfied. The Commission may, after a hearing, permit an establishment society to accept, on conditions satisfactory to the Commission, as members all persons subject to insurance in its district.

Section 39. EMPLOYERS' CONTRIBUTIONS. The Commission shall assess, upon every employer any of whose employees are insured in labor union, benevolent, or fraternal societies, a sum equivalent to the employers' contributions had such employees been members of funds. This sum shall be paid in monthly instalments into the guarantee fund established by the Commission.

Section 40. STATE CONTRIBUTIONS. The state shall contribute to every approved society one-fifth of its total expense for benefits and for the expense of Health Insurance under this act, subject to the provisions of Section 42.

Section 41. HEALTH INSURANCE UNION. Two or more health insurance carriers within a district may combine for the administration of the medical benefit subject to the approval of the Commission. The Commission may, after notice to and hearing of the parties of interest, withdraw its approval and dissolve the union, making such disposition of its property as may seem to it in the best interest of the insured.

Section 42. GUARANTEE FUND. The Commission shall reserve 10 per cent. of the contributions of the state to the carriers and pay it into a fund to be known as the guarantee fund, from which it shall contribute for the relief of any carrier on the application of its board of directors after investigation by the Commission. A contribution shall be made only where, in the judgment of the Commission, the necessity arises from epidemic, catastrophe, or other unusual conditions, and shall never be made where, in the opinion of the Commission, the deficit is due to failure or refusal of the directors to levy proper rates of contributions. When and as long as, in the opinion of the Commission, the guarantee fund is sufficient, the Commission shall make no reservation for this purpose.

STATE SUPERVISION

The duties of the public administrative authority under the draft will be principally judicial and supervisory. Its purely administrative functions will be few. It is probable that in some states adequate supervision can be developed under existing administrative bodies,

such as those administering workmen's compensation, while in other states a non-partisan commission of several members, with terms expiring at different times, may be desirable. (Secs. 43-51.)

A social insurance council formed of elective representatives of employers and employees is joined to the Commission in an advisory capacity. An independent body of experienced men is thus provided to advise the public authority, but it has no power to obstruct or delay the execution of the Commission's orders. Its participation on the judicial side will lighten the work of the commissioners and will provide the element of non-partisan, technical knowledge so important for both just and prompt decisions. This sharing in the administration by these men directly concerned in the insurance as beneficiaries and contributors will increase their interest and their knowledge of its operation, will make the administration more surely mutual and diminish the danger from political or selfish ambitions. The method of election of councillors is inexpensive and will insure a more careful judgment as to qualifications of candidates than a general election by all persons in the insurance. (Secs. 52-55.)

Section 43. STATE SOCIAL INSURANCE COMMISSION. A state Social Insurance Commission is hereby created, consisting of three commissioners, to be appointed by the governor, one of whom shall be designated by the governor as chairmain, and one of whom shall be a physician. The term of office of members of the Commission shall be six years, except that the first members thereof shall be appointed for such terms that the term of one member shall expire on January first, nineteen hundred and eighteen; one on January first, nineteen hundred and twenty, and one on January first, nineteen hundred and twenty-two. Each commissioner shall devote his entire time to the duties of his office, and shall not hold any position of trust or profit, or engage in any occupation or business interfering or inconsistent with his duties as such commissioner, or serve on or under any committee of a political party. The Commission shall have an official seal which shall be judicially noticed.

Section 44. SECRETARY. The Commission shall appoint and may remove a secretary, at an annual salary of ———. The secretary shall perform such duties in connection with the meetings of the Commission and its investigations, hearings and the preparation of rules and regulations under the provisions of this act, as the Commission may prescribe.

Section 45. OFFICERS AND EMPLOYEES. The Commission may appoint such officers, other assistants and employees as may be necessary for the exercise of its power and the performance of its duties under the provisions of this act, all of whom shall be in the competitive class of the classified civil service; and the Commission shall prescribe their duties and fix their salaries which shall not exceed in the aggregate the amount annually appropriated by the legislature for that purpose.

Section 46. SALARIES AND EXPENSES. The chairman of the Commission shall receive an annual salary of ——— and each other commissioner an annual salary of ———. The commissioners and their subordinates shall be entitled to their actual and necessary expenses while traveling on the business of the Commission. The salaries and compensation of the subordinates and all other expenses of the Commission shall be paid out of the state treasury upon vouchers signed by at least two commissioners.

Section 47. OFFICES. The commission shall have its main office in the capitol of the state and may establish and maintain branch offices in other cities of the state as it may deem advisable. Branch offices shall, subject to the supervision and direction of the Commission, be in immediate charge of such officials or employees as it shall designate.

Section 48. POWERS OF INDIVIDUAL COMMISSIONERS. Any investigation, inquiry or hearing which the Commission is authorized to hold or undertake may be held or undertaken by or before any commissioner, and the award, decision or order of a commissioner when approved and confirmed by the Commission and ordered filed in its office shall be deemed to be the award, decision, or order of the Commission. Each commissioner shall, for the purpose of this act, have power to administer oaths, certify to official acts, take depositions, issue subpoenas, and compel the attendance of witnesses and the production of books, accounts, papers, records, documents and testimony.

Section 49. POWERS OF COMMISSION. The Commission may adopt all reasonable rules and regulations and do all things necessary to put into effect the provisions of this act.

Section 50. JURISDICTION OF COMMISSION TO BE CONTINUING. The power and jurisdiction of the Commission over each case shall be continuing, and it may, from time to time, make such modification or change with respect to former findings or orders thereto as in its opinion may be just.

Section 51. REPORT OF COMMISSION. Annually on or before the first day of February the Commission shall make a report to the governor, which he shall lay before the legislature, which shall include a statement of the apportionment of the state contribution, statistics of sickness experience under this act, a detailed statement of the expenses of the Commission, the condition of the state guarantee fund, together with any other matter which the Commission deems proper to report, including any recommendations it may desire to make.

Section 52. SOCIAL INSURANCE COUNCIL. The social insurance council shall consist of twelve members, six of whom shall be elected by employer directors of the local and trade funds and six by employee directors of the local and trade funds; their term of office shall be two years, except that in the first election three of the employer and three of the employee members of the council shall be elected for one year; they shall receive a compensa-

tion of ——— a day for each day spent on the business of the council and shall be reimbursed for reasonable expenses.

Section 53. OFFICERS OF COUNCIL. The council shall elect a president from its own number; the secretary of the Commission shall act as the secretary of the council.

Section 54. MEETINGS OF COUNCIL. The council shall meet during the first week of December, of March, of June, of September, each year. Special meetings shall be called by the president on the request of at least five members of the council or of two members of the Commission, at any time.

Section 55. DUTIES OF COUNCIL. The annual report and recommendations of the Commission shall be laid before the December meeting of the council before transmission to the governor, and the council may approve them or make a separate report and recommendations to the governor. All general regulations proposed by the Commission shall be laid before the council at a regular or special meeting for discussion before final adoption, except in cases of urgency, to be determined by the Commission, and in this case the regulation shall be laid before the next regular meeting of the council or a special meeting called for the purpose.

Section 56. MEDICAL ADVISORY BOARD. The state medical societies shall choose a medical advisory board which shall be consulted on medical matters.

Section 57. SETTLEMENT OF DISPUTES. All disputes arising under the act, except those provided for in Sections 14 and 58, shall be determined by the Social Insurance Commission either on appeal from the proper authority or from the carrier or, in case of disputes between carriers, by original proceedings. The Commission may assign any dispute for hearing and determination to a dispute committee composed of one employer and one employee member of the council, and a member of the Commission, as chairman, the members of the council to serve in turn on the dispute committee for periods of one month; either party may appeal from the decision of the dispute committee to the Commission within thirty days from the date of rendering the decision.

Section 58. MEDICAL DISPUTES. All disputes regarding medical benefit which have been appealed to the Commission shall be referred by the Commission to the medical advisory board which shall report to the Commission and the Commission shall not decide any such dispute until after a report has been made by the board.

Section 59. SUITS AT LAW. Suit shall not be brought in any court on any matter on which an appeal is allowed to the Commission, until after a decision by the Commission or of a dispute committee, and the statutes of limitations shall not begin to run in such cases until after decision of the Commission or dispute committee is filed.

ANNUAL MEETING.

In this issue there is contained the completed program for our Fifty-first Annual Meeting that is to convene in Houghton on August 15, 16 and 17. A careful perusal of this program will reveal to the reader that this meeting promises to be of extraordinary interest and profit. We are not without considerable pride over the general excellency of the papers and subjects that are to be presented and discussed. There is every assurance that the meeting is going to maintain past experiences. All that is needed is a goodly attendance and spirited interest. It rests with you, member, to supply this latter perquisite.

The Houghton County profession is alert to the responsibilities that rest upon them as hosts and they have indicated that they will not be found wanting.

We desire to call to the attention of the appointed delegates that the first session of the House of Delegates will convene on Tuesday evening as determined by the 1915 meeting of that legislative body. All delegates are expected to be present at that first session of the House of Delegates—Tuesday evening, August 15, at 8:00 p. m.

We refer every member and reader to the official program for further announcements and information.

SPECIAL TRAIN.

In our June and July issues we stated that a Special Train to Houghton would be arranged for providing 100 reservation were secured. At the time of going to press the reservations made have been very far below the required number. We are therefore compelled to announce that this special train will NOT be arranged for. Members going to Houghton to attend the Annual Meeting will find the following the most available routes:

By boat from Port Huron. (See advertisement this issue).

Members residing in the Eastern part of the State: Via Michigan Central Railroad to Mackinaw and then via the South Shore line from St. Ignace.

From Detroit to Grand Rapids and then via G. R. & I. to Mackinac and via South Shore Line to Houghton.

Via Chicago: Leave Chicago on sleeper at night via the Northwestern or the Chicago, Milwaukee and St. Paul R. R.s arriving in Houghton the following morning.

The above mentioned routes are the most suitable routes by which connections are made with the least amount of disturbance.

HOTELS.

The Douglas Hotel at Houghton is the official headquarters. This hotel can provide accommodations for 125 and the Dees Hotel for 50. At Hancock, distant but five minutes on the street car, the Scott Hotel can accommodate 100 and the Northwestern 50. Calumet is but 12 miles from Houghton with a half-hour car service. The Northwestern Hotel in Calumet will accommodate 50. In addition the Committee has provided a list of rooms in private homes and all those who have not secured hotel accommodations may be assurred of comfortable rooms if they will make application to Dr. S. LeVine, Secretary of the Committee on Arrangements, Houghton, Mich.

ON DUTY.

When the call came for the mobilization of the National Guard, a goodly number of our fellows loyally responded and leaving home and practice, are now on duty in the United States Army.

Words are utterly inadequate to record appreciation of this service of the profession to the public and the personal sacrifice each member is making to this end. Conflicting emotions are aroused by the contemplation of this saerifice wholly unnecessary were considerations of humanity and the square deal to govern the relation of so-called "rulers." (may the word eventually be consigned to oblivion) to one another even as they govern the relations of physician to patient. Medicine and the allied sciences and arts, (surgical, dental, nursing, laboratory, pharmaceutical, etc.) constitute the only conservative influence in war. Our admiration goes out to the medical brethren who have in this, as invariably in similar crises in the past, upheld the sacred tradition of the profession. His service required, no matter when or where, in storm or sunshine, on the broad highways or the lowly bypaths of life, in war or peace, in scourge or pestilence, the true physician has been found ready for duty. More have responded to the present call than were needed and many are holding themselves in readiness to move when the necessity arises.

With admiration for this unselfish devotion to their country and profession, there is associated the sentiment of sympathy for the wives and families of these men separated from their homes and work, responding to a call which leads them God knows where. There is no fear that they will not acquit themselves with honor and fidelity. We know they will—but a feeling of gloom steals in through the spectre of danger which the future may have in store for these devoted men. We pledge them support and allegiance. Their families shall have our watchful care and protection and on their return, friendship and aid shall be ungrudgingly given to the end that they be enabled to resume their work at the point where it was interrupted.

It is difficult to repress the feeling that the necessity for this sacrifice has been brought about through unpreparedness, political manoeuvering, unpractical theories as to "peace, peace where there is no peace," and to governmental inefficiency. Sentiments of this sort should not, however, dominate in the presence of a grave emergency.

The *Journal* pledges the support of Michigan doctors at home to those at the front who have so cheerfully heeded the call of their country.

ACTIVE OR SILENT?

A few years ago, shortly after the present Compensation law became effective, considerable comment was heard here and there about the law being an imposition upon the profession in that it conferred authority to question medical and surgical fees. There were some who implied that had they but known that the law was under consideration they would have become active so as to cause the incorporation of certain clauses that would insure a more favorable enactment in behalf of the doctors.

The fact that that law was being proposed and that it would most likely be enacted by the legislature was announced to the entire profession of the state. The profession remained silent and no organized effort was made to interview the legislators. If that law contains clauses that are detrimental to the profession the doctors of Michigan individually and collectively are at fault because they made no attempt to prevent or modify the proposed legislation. They remained silent upon the entire subject.

There is now looming up on the horizon a movement that is being directed to secure legislative enactment that will provide sick insurance for certain classes and that will create a plan whereby medical and surgical services will be provided upon a fee or salary basis. In

our last issue and also in this one we are publishing a proposed draft of such a law. A careful perusal of its provisions will at once convince our members of the vital problems that are involved. If that law, or one similar in its provisions, is enacted there is going to be created a condition that is of vital concern to every doctor in Michigan. It is going to be determined by legislators what duties are to be performed by the medical profession and how the services of the doctors shall be remunerated.

The time is here—now—when the profession of Michigan as a whole and as individuals should give this matter their earnest thought. Plans should be advanced for a careful study of the subject. Committees should be appointed. Preparation should be made to impress the legislators that when such an act comes up for consideration that the organized profession of the state should be consulted and heard. The full strength of an active and influential organized profession should be concentrated in the solution of this problem and to direct the ultimate enactments. The profession must become active.

Are you going to be active or silent? Are you going to devote time and study to the subject? Are you going to arouse your community's interest? Are you going to do your part to gain the respect and influence of the representatives of your vicinity? Are you going to attend the state meeting and help start the movement in the right direction?

These are pointed questions that must be solved by each member and which require his active consideration. If you are content to remain silent you will have no right to make a holler or voice a complaint when the law is passed and in force. Are you going to be silent or active?

Editorial Comments

The officers and staff of Grace Hospital, Detroit, have undertaken the publication of a Bulletin that they propose to issue quarterly. It is devoted to the research and clinical investigations that are developed in the hospital. The first issue contains several very interesting and valuable articles and case reports. It is attractive in form and typographical construction. We venture to prophesy that the early future will witness its development into a very valuable medical publication.

If you have any regard or interest in your *Journal* we earnestly request that you patronize our advertisers and give them your preference. Unless our advertising income is increased and advertisers are impressed with the value of our *Jorunal* as a sales medium there will be no other course than to diminish the size of the publication. The increased cost in paper, ink, labor, etc., will not permit us to send out an eighty to ninety page *Journal* unless our revenues from advertising are increased.

The Committee on Social Insurance of the A.M.A. closes its annual report with this paragraph: "The more these laws are studied the more it is evident how essential is the medical profession in their administration. It is equally essential that the profession should clearly understand these laws." We therefor urge that every reader make it a point to familiarize himself with the points at issue and that in so doing we, as a united profession, may govern and direct the important provisions of this proposed innovation.

After the expenditure of some three months devoted to the trial of the Wine of Cardui Suit of libel against the *Journal of the American Medical Association* the jury after being out six days, returned a verdict of one cent in favor of the plaintiff. One hundred and ninety witnesses were placed upon the stand and some 506 depositions were presented. The damages that were asked by the plaintiff was $200,000. We concur in the comment of the *Journal of the A.M.A.*: "Viewing all the facts in the case and remembering the heavy damages asked by the plaintiff the medical profession may interpret the verdict thus: 'Technically guilty; morally justified. To the Association a moral triumph; to the 'patent medicine' interests a Pyrrhic victory." The suit revealed but another instance wherein the profession as a whole assume the moral and financial burden in its attempt to safeguard the public health. It is not only necessary that the profession unselfishly devote its time and energy in pointing out to the public the frauds that are being perpetrated and thrust upon them but in addition the profession must defend its efforts in behalf of humanity in the courts of law. Such a state of affairs may seem discouraging but eventually we are certain that the truth will prevail and the ends sought be attained. Then, greater will be the glory and the honor. In the meantime we pledge our loyal support and con-

fidence to those members who compose the Council on Pharmacy and assure them that we are back of them in the commendable work that they are doing.

Of course you are going to Houghton. The dates are August 15, 16 and 17. In addition to participating in a valuable program it will be an excellent outing.

Six medical schools (University of Minnesota, Rush, California, Vermont, Leland Stanford and Northwestern Universities) have adopted the rule that their graduates must pursue a year of hospital internship before being granted their medical degree. The Medical Boards of Registration of Pennsylvania, New Jersey and Rhode Island definitely require a year of service in an approved hospital as a requisite for the licensure to practice medicine in those states.

The foregoing is indicative of the trend of medical educational requirements that are being exacted and which requirements will in the very near future become universal. By 1920 this will undoubtedly be a requirement of all state boards.

There then presents the problem of inspecting and classifying the hospitals of this country and designating those that are capable of giving a satisfactory course of work to the internes. The Council on Medical Education has this work in hand and the American College of Surgeons has a fund of $10,000 placed at its disposal by the Carnegie Foundation for the coming three years that is to be devoted to this work—a total of $30,000. The systematic way in which the work is to be undertaken promises that on completion valuable data will be available in regard to every hospital of any consequence.

It therefore becomes incumbent upon every hospital and its staff to promptly undertake the institution of such plans and methods as will entitle their hospital to be incorporated in the recognized and approved list.

Almost two years ago we stated in these columns that in order to be effective and of value the mechanical apparatus—the Pulmotor and Lungmotor—should be available and in action within five minutes after respiration had ceased. A recent issue of the *Journal of the A.M.A.* contains an article of "Resuscitation Apparatus" and we quote the following: "The Resuscitation Committee concluded that probably ten minutes is the extreme limit of time beyond which restoration is practically impossible. In animal experimentation when the animal has been left alone after respiration has ceased for a period of five minutes, the subsequent efforts of revival have never been successful."

After numerous and repeated experiments and attempts that all resulted in failure to re-establish the respiratory act we have come to the conclusion that these mechanical contrivances are of little use after the lapse of five minutes. In several instances we have labored for four hours without success and in a goodly number of instances we have operated these mechanical respirators for an hour with like failure. Our attitude is that when there is no heart action and respiration signs have been absent for a period of five minutes that then all hope of re-establishing these vital functions must be abandoned.

The teaching of employees and department heads the method of performing Sylvester's or Schaefer's manipulations of artificial respiration will be attended with greater beneficial results than the purchase of any number of mechanical devices. The purchase of a mechanical apparatus may well be considered a useless extravagance.

A room fitted as a small laboratory, with the necessary chemicals and a microscope, will prove a better investment in the long run than a static machine, ozone apparatus and similar new-fangled mechanical contrivances.

Informally it was brought to the attention of a number of civilian physicians that a consulting committee on medical preparedness would be desirable. The presidents of the American Medical Association, American Surgical Association, Congress of American Physicians and Surgeons, the Clinical Congress of Surgeons of North America and the American College of Surgeons appointed a committee that would co-operate and develop the civilian and reserve medical resources of this country to the highest point of efficiency. That committee was organized on April 14th with Dr. W. J. Mayo as Chairman and Dr. Frank F. Simpson as Secretary. On April 20th the Executive members of this committee met in Washington and presented in person to President Wilson a memorandum of which the following was the chief feature:

1. To establish through the membership of their respective affiliations and the local medical societies of the several states, an organiza-

tion that would be in a position to make a comprehensive survey of the medical resources of the country.

2. To make a complete invoice of such resources available in peace and in the emergency of war. This invoice would include not only the names of the men available for field or home duty who are trained in the specialties of medicine, surgery, and sanitation, but would also include the extensive equipment under the control of these men, such as hospital facilities and lists of trained nurses.

3. To aid the public health service, in sanitation, quarantine, and the hygiene of troops; in the inspection of camps and posts; to analyze water sources and supply systems; to study effects of climates, exposure, diet, etc., all designed for the welfare of individuals enlisted in the Army and Navy Departments.

This General Committee, in pursuance of its plan for a general survey of the medical resources of the country, has selected a committee in each state to aid in the work. The Committee thus appointed for Michigan consists of: Reuben Peterson, Chairman, A. W. Hornbogen, F. C. Warnshuis, Max Ballin, J. T. Case, J. G. R. Manwaring, C. B. G. deNancréde and R. R. Smith.

The entire profession of the Upper Peninsula extends a most cordial and hearty invitation to all the members to attend our Fifty-first Annual Meeting in Houghton on August 15, 16 and 17, as the guests of the Houghton County Medical Society. Our hosts have been unceasing in their labors to provide for our comfort, profit and pleasure and are eager to have us visit them in goodly numbers.

Blanks for reporting the examinations of persons presenting themselves on Tuberculosis Day have been mailed to all County Secretaries and may be secured from them. It is urged that these blanks be promptly mailed to Dr. V. C. Vaughan, Jr., Kresge Bldg., Detroit, in order that he may compile a report of the results and render this report at our Annual Meeting.

DO YOU KNOW THAT

Rural sanitation is a health protection to the city-dweller?

It's foolish to educate a boy and then let him die of typhoid fever?

The U. S. Public Health Service issues a free bulletin on the summer care of infants?

Exercise in the garden is better than exercise in the gymnasium?

Program of the Fifty-first Annual Meeting of the Michigan State Medical Society at Houghton, August 15-16-17, '16

OFFICIAL CALL

The Fifty-first Annual Meeting of the Michigan State Medical Society will be held in Houghton, Houghton County, Michigan on Tuesday, Wednesday and Thursday, August 15, 16 and 17, 1916.

The HOUSE OF DELEGATES will convene on TUESDAY Evening, August 15 at 8:00 p. m.; WEDNESDAY at 8:30 a. m.; THURSDAY at 8:00 a. m.

The COUNCIL will convene in regular session on TUESDAY Evening at 6:00 p. m.

The GENERAL SESSION will convene on WEDNESDAY Morning at 10:00 a. m. and on THURSDAY Morning at 11:30 a. m.

The COUNTY SECRETARIES ASSOCIATION will meet on TUESDAY Evening at 6:00 p. m.

The SCIENTIFIC SECTIONS will hold their regular sessions at such time and place as is designated hereafter in the program.

A. W. Hornbogen, President.
Frederick C. Warnshuis, Secretary.

PLACE OF MEETINGS

The HOUSE OF DELEGATES will hold their sessions in the Amphidrome.

The GENERAL SESSIONS will meet in the Amphidrome.

The COUNCIL will meet in the Parlor of the Douglas House.

The SCIENTIFIC SECTIONS will meet in the auditoriums designated in the Section Program.

THE COUNCIL

Chairman—William T. Dodge, Big Rapids.
Vice-Chairman—A. L. Seeley, Mayville.
Secretary—F. C. Warnshuis, Grand Rapids.

MEETINGS

Tuesday Evening, August 15 at 6:00 p. m.
Wednesday, August 16 at 12 noon.
Thursday, August 17 at 12 noon.

HOUSE OF DELEGATES

Meeting Place: Amphidrome

President—A. W. Hornbogen, Marquette.
Secretary—F. C. Warnshuis, Grand Rapids.

FIRST SESSION

Tuesday Evening, August 15th, 8:00 P. M. Sharp.

ORDER OF BUSINESS:

1. Call to Order by the President.
2. Roll call.
3. Report of the Committee on Credentials.
4. Reading of the Minutes of the last Annual Meeting.
5. Annual Report of the Council, W. T. Dodge, Chairman, Big Rapids.
6. Report of Delegates to the American Medical Association, L. J. Hirschman, Detroit.
7. Report of the Committe on Medical Education, Burt R. Shurly, Chairman, Detroit.
8. Report of the Committee on Legislation and Public Policy, A. M. Hume, Chairman, Owosso.
9. Report of the Committee on Venereal Prophylaxis, Udo J. Wile, Chairman, Ann Arbor.
10. Report of the Committee on Tuberculosis, V. C. Vaughan, Jr., Chairman, Detroit.
11. Report of the Committee on Public Health Education, Guy L. Kiefer, Chairman, Detroit.
12. Report of the Committee on Civic and Industrial Relation, Reuben Peterson, Chairman, Ann Arbor.
13. Election of Committee on Nominations.
 The duty of this committee is to nominate:
 (a) 1st, 2d, 3rd and 4th Vice-Presidents.
 (b) Two delegates to American Medical Association to succeed L. J. Hirschman and H. E. Randall.
 (c) To select place for holding the 1917 Annual Meeting.
14. Appointment of Business Committee and other Committees by the President.

SECOND SESSION

Wednesday, August 16th, 8:30 A. M.

1. Roll Call.
2. Miscellaneous Business.
 (a) Recommendations to the Council.
 (b) Proposals of ammendments to the Constitution and By-Laws.
3. New Business.
4. Report of Appointed Committees.

THIRD SESSION

Thursday, August 17th, 8:00 A. M.

1. Roll Call.
2. Unfinished Business.
3. Report of Committees.
4. Report of the Nominating Committee.
5. Election of Nominees.
6. Miscellaneous Business.
7. Adjournment **Sine die.**

DELEGATES AND ALTERNATES—FIFTY-FIRST ANNUAL MEETING

NOTE: Delegates name in black face type; Alternates in light face.

ALPENA—Branch No. 48

Leo Secrist, Alpena.
F. J. McDaniels, Alpena.

ANTRIM-CHARLEVOIX-EMMET—Branch No. 41.

L. W. Gardner, Harbor Springs.
C. C. Varden, East Jordan.

BARRY—Branch No. 26

G. W. Lowry, Hastings.

BAY-ARENAC-IOSCO—Branch No. 4

Hubbard N. Bradley, Bay City.
A. F. Stone, Bay City.

BENZIE—Branch No. 59

E. J. C. Ellis, Benzonia.
H. J. Kinne, Frankfort.

BERRIEN—Branch No. 50

BRANCH—Branch No. 9

Samuel Schultz, Coldwater.
R. W. Ridge, Coldwater.

CALHOUN—Branch No. 9

E. L. Parmenter, Marshall.
S. R. Eaton, Battle Creek.
E. L. Eggleston, Battle Creek.
Geo. C. Hafford, Albion.

CASS—Branch No. 36

W. C. McCutcheon, Cassopolis.
S. L. Loupee, Vandalia.

CHEBOYGAN—Branch No. 58

W. F. Reed, Cheboygan
C. B. Tweedale, Cheboygan.

CHIPPEWA-LUCE-MACKINAW—Branch No. 35

E. H. Campbell, Newberry.
J. H. Ferguson, Saulte Ste. Marie.

CLINTON—Branch No. 39

A. O. Hart, St. Johns.
M. Weller, St. Johns.

DELTA—Branch No. 38

A. W. Miller, Gladstone.
G. W. Moll, Foster City.

DICKINSON-IRON—Branch No. 56.

E. M. Libby, Iron River.
A. M. Darling, Crystal Falls.
C. F. Larson, Crystal Falls.
E. Cruse, Iron Mountain.

EATON—Branch No. 10

P. H. Quick, Olivet.
Walter Taylor, Potterville.

GENESEE—Branch No. 24

H. A. Stewart, Flint.
J. C. Benson, Flint.
C. D. Chapell, Flint.
W. C. Reed, Grand Blanc.

GOGEBIC—Branch No. 52

W. E. Tew, Bessemer.
A. J. O'Brien, Ironwood.

GRAND TRAVERSE-LEELANAU—

F. P. Lawton, Traverse City.

GRATIOT ISABELLA-CLARE—Branch No. 25

C. B. Gardner, Alma.
M. F. Brondstetter, Mt. Pleasant.
C. M. Denny, Middleton.

HILLSDALE—Branch No. 3

W. H. Sawyer, Hillsdale.
H. H. Frazer, Hanover.

HOUGHTON-BARAGA-KEWEENAW—
Branch No. 7

W. H. Dodge, Hancock.
R. B. Harkness, Houghton.

HURON—Branch No. 47

S. B. Young, Caseville.
A. E. W. Yale, Pigeon.

INGHAM—Branch No. 40

B. M. Davey, Lansing.
B. D. Niles, Lansing.

IONIA—Branch No. 16

R. R. Whitten, Ionia.
F. A. Hargrave, Palo.

JACKSON—Branch No. 27

L. J. Harris, Jackson.
H. A. Broun, Jackson.

KALAMAZOO-VAN BUREN-ALLEGAN—
Branch No. 64

P. T. Butler, Kalamazoo
A. L. Van Horn, Otsego.
W. F. Hoyt, Paw Paw.
L. V. Rogers, Galesburg.
C. A. Bartholomew, Martin.
N. D. Murphy, Bangor.

KENT—Branch No. 49

F. J. Lee, Grand Rapids.
A. J. Baker, Grand Rapids.
H. W. Dingman, Grand Rapids.
L. A. Roller, Grand Rapids.
H. J. Pyle, Grand Rapids .
C. C. Slemons, Grand Rapids.

LAPEER—Branch No. 23

D. J. O'Brien, Lapeer.

LENAWEE—Branch No. 51

F. A. Howland, Adrian
Geo. Lochner, Adrian.

LIVINGSTON—Branch No. 6

E. B. Pierce, Howell.
B. H. Glenn, Fowlerville.

MACOMB—Branch No. 48

MANISTEE—Branch No. 48

Jas. A. King, Manistee.
D. H. McMullen, Manistee.

MARQUETTE-ALGER—Branch No. 28

C. F. Moll, Kenton.
J. H. Holm, Ishpeming.

MASON—Branch No. 17

S. M. Spencer, Freesoil.
W. C. Martin, Scottville.

MECOSTA—Branch No. 8

C. F. Karshner, Big Rapids.
Geo. H. Lynch, Big Rapids.

MENOMINEE—Branch No. 55

S. C. Mason, Hermansville.
C R. Elwood, Menominee.

MIDLAND—Branch No. 43

Gus Sjolander, Midland.
E. J. Dougher, Midland.

MONROE—Branch No. 15

P. S. Root, Monroe.
V. Sisung, Monroe.

MONTCALM—Branch No. 13

A. S. Barr, Greenville.
F. J. Fralick, Greenville.

MUSKEGON-OCEANA—Branch No. 61

V. A. Chapman, Muskegon.
F. W. Garber, Muskegon.

NEWAYGO—Branch No. 50

W. H. Barnum, Fremont.
Chas. Long, Fremont.

OAKLAND—Branch No. 5

O. M. C. O. R. O.—Branch No. 11

S. N. Insley, Grayling.
F. E. Abbott, Sterling.
C. R. Keyport, Grayling.
A. C. Mackinon, Lewiston.

ONTONAGON—Branch No. 66

E. J. Evans, Rockland

OSCEOLA-LAKE—Branch No. 30

E. Fairbanks, Luther.

OTTAWA—Branch No. 32

J. J. Merson, Holland.
W. G. Winter, Holland.

PRESQUE ISLE—Branch No. 63.

Wm. W. Arscott, Rogers City.
C. A. Carpenter, Onaway.

SAGINAW—Branch No. 14

Jas. W. McMeekin, Saginaw.
A. R. McKinney, Saginaw.

SANILAC—Branch No. 20

J. A. Fraser, Livingston
E. Meyer, Carsonville.

SCHOOLCRAFT—Branch No. 57

S. H. Rutledge, Manistique.
W. J. Saunders, Manistique.

SHIAWASSEE—Branch No. 33

S. S. C. Phippen, Owosso.
J. A. Rowley, Durand.

ST. CLAIR—Branch No. 45

J. L. Chester, Emmet.
C. B. Stockwell, Port Huron.

ST. JOSEPH—Branch No. 29

W. A. Royer, Three Rivers.
F. K. Moyer, Three Rivers.
R. E. Dean, Three Rivers.

TRI COUNTY—Branch No. 62

R. J. E. Oden, Cadillac.
V. F. Huntley, Manton

TUSCOLA—Branch No. 44

W. C. Garvin, Millington.
R. A. Townsend, Fairgrove.

WASHTENAW—Branch No. 42

Reuben Peterson, Ann Arbor.
J. A. Wessinger, Ann Arbor.
Udo J. Wile, Ann Arbor.
Harry B. Schmidt, Ann Arbor.

WAYNE—Branch No. 2

All Detroit.

W. J. Wilson
R. E. Mercer.
H. W. Yates.
J. N. Bell.
J. A. MacMillan
C. D. Brooks
F. B. Walker.
Jas. Clelland.
J. D. Matthews.
F. B. Tibbals.
D. M. Campbell.
J. F. Davis.
R. A. C. Wollenberg.
J. H. Dempster.
W. J. Cassidy.
H. R. Carstens.
P. M. Hickey.
R. C. Andries.
H. W. Pierce.
J. H. Andries.
Harold Wilson.
L. J. Hirschman.
C. E. Simpson.
F. L. Newman.
A. McLean.
R. H. Stevens.

GENERAL MEETING

Wednesday, August 16, 10:00 A. M.

Place: Amphidrome

President—A. W. Hornbogen, Marquette.
Secretary—F. C. Warnshuis, Grand Rapids.

1. Call to order by the President.
2. Invocation: Rev. Wm. Ried Cross.
3. Address of Welcome, Mayor I. I. Hartman.
4. Address of Welcome, P. D. Bourland, President, Houghton County Medical Society.
5. Response on behalf of the State Society, President, A. W. Hornbogen.
6. Response on behalf of the Profession of the Lower Peninsula, C. B. Burr, Flint.
7. Report of Committee on Arrangements, A. F. Fischer, Chairman.
8. Report of the House of Delegates, the Secretary.
9. Address, F. A. Jeffers, Painesdale.
10. Address, "Papal Physicians," V. Rev. Francis X. Barth.
11. President's Annual Address, A. W. Hornbogen, Marquette.
12. Miscellaneous Business: Under this order it will be opportune for any member to bring before the Society any subject of general interest, either by informal discussion or formal resolution.
13. Nominations for President for 1916-1917.
14. Adjournment.

SECOND GENERAL SESSION

Thursday, August 17th, 11:30 A. M.

1. Call to order.
2. Reading of Minutes.
3. Report of the House of Delegates.
4. Miscellaneous Business.
5. Announcement of the Result of the ballot for President.
6. Introduction and Installation of the President-elect.
7. Resolutions.
8. Adjournment **sine die.**

SECTIONAL MEETINGS

SECTION ON GENERAL MEDICINE

Chairman—**V. C. Vaughan, Jr., Detroit.**

Secretary—**H. M. Highfield, Riverdale.**

First Session, Wednesday Afternoon, August 16, 1:45 P. M.

(The Secretary of the Section will collect all papers as soon as they are read).

1. The Diagnosis of Pancreatic Lesions.
 Dr. A. M. Mortenson, Battle Creek.

 Abstract. A discussion of the various lesions to which the pancreas is subject. Calling attention to the various symptoms and laboratory findings in these lesions and their indications, with special reference to the symptoms of pancreatitis.

2. Intestinal Toxemia.
 Dr. C. D. Aaron, Detroit.

 Abstract. What is understood by chronic intestinal stasis and intestinal toxemia. Etiology, course of intestinal toxemia, indican symptoms, medical and surgical treatment.

3. Discussion of Some Interesting Heart Cases.
 W. J. Wilson, Detroit.

 Discussion opened by Dr. A. W. Ives, Detroit.

 Abstract not here.

Second Session, Thursday Morning, August 17, 9:00 A. M.

4. Peace and War in the Human Organism.
 Dr. F. McDee Harkin.

 Abstract. Harmony or peace an ideal of the universe, harmony or peace or health an ideal of mankind, enemies of the human organism classified, nature's methods of defence, man's methods of defence, application of foregoing to present world-war.

5. The Roentgen Examination of the Sella Turcica.
 Dr. P. M. Hickey, Detroit.

 Discussion opened by Dr. C. A. Crane, Kalamazoo

6. Age and Arterial Degeneration.
 Dr. B. A. Shepherd, Kalamazoo.

 Abstract. Nomenclature indefinite. Age and normal progressive arterial changes. Beginning of pathological changes. Site of lesions.. Etiological productive factors. Pathological changes not limited to old age. Symptoms: increased blood pressure not necessarily a factor. Often indefinite early. Circulatory disturbances, renal symptoms. Disturbances of the central nervous system, muscular system and digestive system. Prognosis,. Treatment: Reduction of blood pressure often vicious. Consideration of the various system units in outlining treatment.

7. The Diagnosis and Treatment of Chronic Interstial Nephritis with Hypertension.
 Dr. L. W. Howe.

 Discussion opened by Dr. W. J. Wilson, Jr. Detroit

Third Session, Thursday Afternoon, August 17, 1:45 P. M.

8. Election of Chairman.

9. Symposium on Public Health and Tuberculosis.
 The Campaign Against Tuberculosis.
 Dr. W. DeKliene, Lansing.

 The Tuberculosis Problem.
 Dr. A. F. Fischer, Hancock.

 Abstract. Meeting the problem requires an inventory of cases. Inventory means diagnosis. It is necessary for everyone to be acquainted with factors of diagnosis suitable to their viewpoint:

 Symptoms which may be observed by any person.

 Symptoms which the general practitioner would recognize.

 Symptoms which belong to him who gives special attention to work.

 Etiology and Diagnosis of Enlarged Bronchial Glands in Infancy and Childhood.
 Dr. C. H. Johnston, Grand Rapids.

 The Treatment of Enlarged Bronchial Glands in Infancy and Childhood.
 Dr. H. M. Rich, Detroit.

 Discussion opened by C. G. Parnell, Jackson; J. S. Pritchard, Battle Creek.

SECTION ON SURGERY

First Session, Wednesday Afternoon, August 16th, 1:45 P. M.

Chairman—**Alex. McKenzie, Port Huron.**

Secretary—**A. W. Blain, Detroit.**

1. Chairman's Address—"To be Forewarned is to be Forearmed."
 Alexander McKenzie, M.D., Port Huron.

2. Dislocations of the Ankle,
 Angus McLean, M.D., Detroit.
 Discussants { Alexander Campbell, Grand Rapids
 V. L. Tupper, Bay City.

3. Pure Cholesterin Stones in Gall Bladder Surgery.
 Henry J. VandenBerg, M.D., Grand Rapids.
 Discussants { Frank B. Walker, Detroit.
 W. Ballard, Bay City.

4. A Simple Operation for Severe Cases of Hyperthyroidism.
 Max Ballin, M.D., Detroit.
 Discussants { Clark D. Brooks, Detroit.
 C. G. Darling, Ann Arbor.
 George Potter, Detroit.

Second Session Thursday, August 17, 9 A. M.

5. Indication for Operation in Goiter Cases and the Post-Operative Results.
 A. E. MacGregor, M.D., Battle Creek.
 Discussants { Frank C. Witter, Petoskey.
 Ray Andries, Detroit.

6. Diagnosis of Surgical Conditions of the Abdomen.
 J. A. MacMillan, M.D., Detroit.
 Discussants { G. C. Penberthy, Detroit.
 Ray Stone, Battle Creek.

7. Nitrous-Oxide in General Surgery and Obstetrics.
 Wm. T. Shannon, M.D., Detroit.
 Discussants { H. E. Randall, Flint.
 Frank Kelly, Detroit.

8. Surgery of the Brain.
H. N. Torrey, M.D., Detroit.
Discussants { Alexander M. Sterling, Detroit. / F. C. Warnshuis, Grand Rapids. / Rowland Parmenter, Detroit.

9. The Direct Transfusion of Blood.
John J. Reycraft, M.D., Petoskey.
Discussants { Harry Pepper, Detroit. / Walter C. Vaughn, Detroit.

Third Session Thursday, August 17, 1:45 P. M.

Election of Chairman and Secretary.

10. An Operation for the Correction of Torticolles.
A. D. LaFerte, M.D. Detroit.
Discussants { Wm. E. Blodgett, Detroit. / D. E. Robinson, Jackson.

11. Surgery of a Country Hospital.
W. J. Herrington, M.D., Bad Axe.

12. Signs and Symptoms of Posterior Fossa Tumors
Heindrick A. Reye, M.D., Detroit.
Discussants { H. N. Torry, Detroit. / Max Ballin, Detroit.

13. Surgical Diseases of the Gall Bladder and Ducts.
G. S. Ney, M.D., Port Huron.
Discussants { Wm. J. Cassidy, Detroit. / R. E. Balch, Kalamazoo. / A. D. McAlpine, Detroit.

14. The Diagnosis and Treatment of Anal and Rectal Fistula. (Lantern slides.)
Louis J. Hirschman, M.D., Detroit.
Discussants { J. A. MacMillan, Detroit. / Arthur O. Hart, St. Johns.

SECTION ON GYNECOLOGY AND OBSTETRICS

First Session, Wednesday, August 16th, 1:45 P. M.

Chairman—**C. E. Boys, Kalamazoo.**

Secretary—**Henry J. Vandenburg, Grand Rapids.**

1. Symposium on: "Gynecological Neurosis."
(a) W. P. Manton, Detroit.

Abstract. The idea of insanity resulting from diseases of the pelvic organs is very ancient, and the myth still prevails among certain classes, of people and the profession. If we accept the partial definition that "Insanity is a manifestation in language or conduct of disease or defect of the brain," it is only necessary to determine whether pelvic disorders in women can or do lead to such derangements of the higher cerebral centers. The collected experiences of a number of competent observers seem to disprove this, but at the same time show that disease of the uterus and appendages, as disease developed in any other part of the body, may, through resulting irritation, pain and suffering, increase the manifestations of the mental sickness. Attempts to classify the varieties of insanity associated with particular pelvic disorders is fruitless and leads to no satisfactory conclusions. It is the writer's belief, reiterated through many years, that the insane woman is entitled to somatic relief without reference to the effect on the mind, and that such relief is usually followed by greater or less improvement in the mental symptoms, but that neither local treatment nor surgery is per se productive of cure.

(b) Reuben Peterson, Ann Arbor.

Abstract. It is absolutely essential that the practitioner and specialist distinguish between nervous manifestations in women due to defective nervous systems where the pelvic organs are normal, or at most, poorly developed and inactive, and quite similar manifestations where the pelvic organs are diseased. In case of disease of the pelvic organs it does not necessarily mean that a cure of this disease will change an abnormal organization into one which is normal. The woman may have been born defective and the restoration of certain organs to normal, while it may help, will not cure. On the other hand, just as with the woman with mental disease, she is entitled to relief locally although she may not be made normal as regards her nervous system.

Failure to recognize these fundamental facts inevitably leads to many unnecessary and consequently unjustifiable operations. Unless one be qualified to make a differential diagnosis between so-called neuroses aggravated by pelvic disease, and neuroses without disease of the genital organs, he should neither operate nor advise operation. Citation of illustrative cases.

(c) R. R. Smith, Grand Rapids.

Discussion led by Dr. C. D. Camp, Ann Arbor.

Second Session, Thursday Morning, August 17th, 9:00 A. M.

2. Sarcomatous Degeneration of Uterine Fibroids.
Dr. Frank C. Witter, Petoskey.

Abstract. This report of cases is taken from the clinical material of all types of pelvic pathology covering several thousand registrations in the Gynecological Clinic of the University of Michigan. The cases discussed show degenerative fibroids undergoing sarcomatous change. Those types which are apparently primarily sarcomatous are not included.

The condition is one of comparative infrequency but there is no method of making diagnosis early without surgical intervention. All types of fibroma are susceptible to this change.

Fibroids are not always as benign as previously supposed. Treatment in all cases should be surgical.

3. X-Ray Findings in Pelvic Conditions.
Dr. James T. Case, Battle Creek.

Abstract. Normal anatomy and physiology of the pelvic colon as shown by the X-ray. The question of pelvic colon adhesions and their relation to constipation. Spasticity, colitis, diverticulosis, carcinoma. Rectal constipation.

4. Retroversion of Uterus and Its Correction.
Dr. Edw. T. Abrams, Hancock.

5. End Results in 100 Round Ligament Operations.
Dr. H. W. Hewitt, Detroit.

Abstract. Brief history of progress made in surgical treatment as shown by extension of the limits of operability and the increase in the number of five year cures. The value of cautery treatment; of combined cautery and radical abdominal hysterectomy. A consideration of the employment of radium and roentgenotherapy.

Suggestion of combined roentgenotherapy with hysterectomy in operable cases and of combined roentgenotherapy and cautery in the inoperable cases.

Third Session, Thursday Afternoon, August 17th, 1:45 A. M.

6. Election of Chairman.

7. Symposium on: The Hemorrhages of Pregnancy.
(a) The First Half of Pregnancy.
Leslie H. DeWitt, Kalamazoo.
(b) The Latter Half of Pregnancy.
Alexander M. Campbell, Grand Rapids.
(c) Post Partum Hemorrhages.
L. S. Ramsdell, Manistee.

SECTION ON OPHTHALMOLOGY, OTO-LARYNGOLOGY

Chairman—**Stanley G. Miner, Detroit.**
Secretary—**Wilfred Haughey, Battle Creek.**

First Session, Wednesday, August 16th, 1:45 P. M.

1. The Traumatic Transplantation of Cilia into the Anterior Chamber.
 Dr. Howell L. Begle, Detroit.

 Abstract. Report of tbree cases. Discussion of the complications which may arise from eyelashes being carried into and remaining in the anterior chamber. Discussion of the question of tbe spontaneous expulsion of transplanted cilia. Operative removal of cilia from tbe anterior chamber.

2. Bacteriology of Acute Ear Infections.
 Dr. Edward J. Bernstein, Kalamazoo.

 Abstract. Acute infections middle ear fraught with too much danger to be ignored to the exteut at present.

 True; spontaneous cure takes place in vast majority, most treatment ordinarily applied, futile. Cures not traceable to tbem, but because patient makes enough protective product to overcome infection and the anatomic conditions are favorable to spontaneous cure, when either above not at hand, then chronicity or death.

 Some cases have mastoid involvement from incipiency, notably in cases of Strep, Mucosus, or Strept, Haemolyticus.

 Prompt opening drum, and microscopic examination of fluid obtained. Preparation of vaccine in case of need.

 Need for ascertaining, number of times, whether bacterimia exists. Cultures to be made on several kinds of media so as not to miss any infecting organism.

 Infections from Strepto, Mucosus rather frequent and symptoms characteristic. Cranial complications and great necrosis common. Also Thrombosis Sinus.

 Fallacy of reliance on Vis Medicatrix Natura. Nature no more anxious for the huge mass of protoplasm tban the single mass in tbe infecting organism.

 All cases sbould be considered and classed according to their bacterial cause and anatomic variety.

3. Some Phases of the Anatomy of the Nose and Accessory Sinuses. Lantern Slide Demonstrations
 Dr. Hanau W. Loeb, St. Louis, Mo.

4. Removal of One Vocal Cord for Abductor Paralysis.
 Dr. Charles H. Baker, Bay City.

 Abstract. Some of the difficulties in diagnosis of Recurrent Laryngeal Paralysis, and in differentation from foreign body in the larynx. Difficulty in intubating or in passing the bronchoscopic tube. Spasm which folded tbe epiglottis even under deep anesthesia.

 Reasons for tracheotomy instead of intubation.

 Prevention of growtb of granulation tissue into fenestrium in tbe tracheotomy tube. Reasons for and operation for removal of one cord. Difficulty in extubation, training for, and final result.

Second Session Thursday, August 17th, 9:00 A. M.

5. Report of Two Cases of Labyrinthitis Complicating Acute Suppurative Otitis Media.
 Dr. Don M. Campbell, Detroit.

6. Macroglossia Lymphangioma.
 Dr. Wilfrid Haughey, Battle Creek.

 Abstract. Report of a case, with laboratory findings. Review of tbe literature.

Third Session, Thursday, August 17th, 1:45 P. M.

7. Election of Chairman.

8. Syphilitic Iritis.
 Dr. Peter J. Livingstone, Detroit.

9. Antral Operations From the Standpoint of Oral Surgeons.
 Dr. Charles H. Oakman, D. D. S., Detroit.

PROGRAM OF THE COUNTY SECRETARIES' MEETING, TUESDAY EVENING, AUGUST 15

President—**F. C. Kinsey, Grand Rapids.**
Secretary—**Alex McKinney, Saginaw.**

PRESIDENT'S ADDRESS. (Five minutes).

"Some Secrets Told Through a Megaphone."
Dr. Frank Cameron Kinsey, Grand Rapids.

PHASES OF COUNTY SOCIETY WORK. (Strictly limited to three minutes).

"Getting Out a Good Attendance."
Dr. Leslie H. S. DeWitt, Kalamazoo.

"Problems of a County Society."
Dr. H. T. Carriel, Marquette.

"The Society Secretaryship: An Office Worth While."
Dr. A. R. McKinney, Saginaw.

"Attendance and Plans for Securing Same."
Dr. Otto L. Ricker, Cadillac.

"The Big Problem of the Small Society."
Dr. Wm. W. Arscott, Rogers City.

"Programs."
Dr. R. C. Winslow, Sault Ste. Marie.

"Financing a Medical Society."
Dr. Geo. E. Moore, Ironwood.

"The County Secretary as a Peacemaker."
Dr. J. L. Nitterbauer, Ontonagon.

"Social Affairs."
Dr. Geo. A. Conrad, Houghton.

State News Notes

Parke, Davis & Co. announce the publication of their 1916 price list, which is said to be an improvement in many respects over any previous issue of this valuable catalogue. The book is divided into three parts: Part 1—Fluid Extracts, Pills, Elixirs, Syrups, Tablets, etc.; Part 2—Specialties, into which have been merged Special Preparations; Part 3—Biological Products. The nomenclature of the U. S. P., Ninth Revision, has been adopted in the new list, the term "milliliter" ("mil") being substituted for the cumbersome "cubic centimeter." The standards of the new U. S. P. applying to fluid, solid and powdered extracts and tinctures, together with the doses, have also been adopted. All Harrison-act items (products that must be ordered on offiical order forms) are clearly distinguished. Its amplitude, its handy classification, its comprehensive general index, all serve to make the new catalogue a reference book of the utmost value to medical practitioners. We understand that the book will be

ready for distribution about August 1. Physicians are advised to write for a copy, addressing their requests to Parke, Davis & Co., Detroit, Mich.

Those who are intending to go to Houghton can make the trip doubly enjoyable by going by water from Port Huron. The Port Huron & Duluth Steamship Company's steel steamers run between Port Huron and Houghton, and one of them will leave Port Huron at 10 p. m. Central time on Aug. 12, arriving at Houghton Aug. 14 at 2 p. m. Returning will leave Houghton Aug. 17. This ought to make a very enjoyable trip. W. S. Jenks, the general passenger agent at Port Huron, will give you full particulars and booklets.

FOR SALE—Western Michigan practice of $2,700, with introduction to purchaser of my residence property located in fine County Seat town of 1600. Electric lights, artesian water, fine roads, schools, churches and collections. Large thickly settled territory. Price $2,700. Terms, address (M. D.) Care *Journal.*

Canadian aothorities have decided to amend their rulings so that graduates of recognized American Medical Schools may take the Canadian Council examination without being compelled to spend a year in a Canadian college.

Dr. J. G. White of Mt. Clemens and Miss Loveless of Ithaca were married June 19.

Dr. C. C. Thomas has accepted a position on the staff of the Traverse City State Hospital.

Dr. J. A. Keho was reappointed Health Officer of Bay City.

Dr. H. R. Varney was chosen chairman of the Section on Dermatology of the A.M.A.

Dr. W. S. Grimes of Detroit is a candidate for election as Coroner.

Dr. W. J. Smith of Cadillac has been appointed health officer.

Dr. D. Emmett Welsh of Grand Rapids has been appointed to membership on the Board of Health.

Deaths

Dr. G. F. Knowles of Manistee died July 13 following an illness of eight months with anemia. Dr. Knowles was a prominent physician of Manistee for twenty-nine years.

Dr. Thomas Henderson of Detroit died July 4 at his home 895 Mt. Elliott Avenue. He was a prominent physician and school board head. Dr. Henderson died from apoplexy. Three years ago he suffered a stroke of paralysis, but he recovered and continued in good health until Monday noon when he became seriously ill.

County Society News

HURON COUNTY

A regular meeting of the Society was held at Harbor Beach July 11, 1916. This meeting was largely in the form of a social gathering for the doctors and their families. The only paper on the program was an article entitled, "How to Prepare and Send Specimens to the State Board of Health Laboratory" by A. A. Spoor, M.D., Lansing. The social features were a trip through the Starch factory, a boat ride upon Lake Huron and afterwards a chicken supper at a Shore Hotel. So much pleasure and good will was shown that it was planned to make the Harbor Beach meeting an annual feature of the Society.

S. B. Young, Secretary.

Book Reviews

1915 COLLECTED PAPERS OF THE MAYO CLINIC, Rochester, Minn. Octavo of 983 pages, 286 illustrations. Philadelphia and London: W. B. Saunders Company, 1916. Cloth $6.00 net; Half Morocco $7.50 net.

The 1915 edition of the Collected Papers of the Mayo Clinic exceeds if anything all previous editions. We do not know of any other volume of 950 pages that covers so many subjects. Every article is of intrinsic value and imparts the latest and accepted viewpoint of the subject discussed and when the entire group of articles are considered only one conclusion can be drawn and that is that it is the volume par excellence and a source of authoritative opinion.

There are no one article or no one subject that may be singled out for exceptional comment or review. The entire number is replete with discussions that bear upon the important subjects that are receiving the attention of the profession today.

It is a volume that we urge every reader and student to secure and to frequently refer to it in the course of his readings and writing. One cannot well afford to be without it.

DISEASES OF THE EYE. By George E. de Schweinitz, M.D., LL.D., Professor of Ophthalmology in the University of Pennsylvania. Eighth Edition, Thoroughly Revised and Enlarged. Octavo of 754 pages, 386 text illustrations, and seven lithographic plates. Philadelphia and London: W. B. Saunders Company, 1916. Cloth, $6.00 net; Half Morocco $7.50 net.

In the Eighth Edition of this text-book its chapters have been revised thoroughly in an endeavor to include due reference to the important ophthalmic

observations and therapeutic measures which have been made and recommended during the last three years.

Another new feature noted in the introduction of the metric equivalent of the doses of remedies and strength of solutions.

This edition is the first of this valuable work that contains record or reference of the following new subjects: Walker's Method of Testing the Visual Field; Squirrel Plague; Anaphylactic Keratitis; Family Cerebral Degeneration with Macular Changes; the Ocular Symptoms of Diseases of the Pituitary Body; Holth's Operation; Homer Smith's Operation; Iridostasis; and similar other recent proven methods.

A portion of the Chapter on Iritis has been rewritten and Elliot's Operation is described by the originator. A goodly number of new illustrations have been inserted.

This work, long a standard, from the pen of America's leading ophthalmologist, in its eight edition, may be pronounced as the most authoritative work upon the subject. It deserves a place in every medical library and merits a pre-eminent position.

THE CLINICS OF JOHN B. MURPHY, M.D., at Mercy Hospital, Chicago.. Volume III, Number III (June, 1916). Octavo of 176 pages, 42 illustrations. Philadelphia and London: W. B. Saunders Company, 1916. Price per year, paper, $8.00; cloth, $12.00.

Received.

Miscellany

DO YOU KNOW THAT

Clean water, clean food, clean houses make clean, healthy American citizens?

The State of California has reduced its typhoid death rate 70 per cent. in the past ten years?

Rats are the most expensive animals which man maintains?

It is estimated that the average manure pile will breed 900,000 flies per ton?

It's worry, not work, which shortens life?

A cold bath every morning is the best complexion remedy?

Poor health is expensive?

The U. S. Public Health Service has reduced malaria 60 per cent. in some localities?

The death rate from typhoid fever in the United States has been cut in half since 1900?

Pneumonia kills over 120,000 Americans each year?

Flyless town has few funerals?

The well that drains the cesspool is the cup of death?

Better wages make better health?

Better health makes better citizens?

Better citizens make a better nation?

Cholera is spread in the same manner as typhoid fever?

The U. S. Public Health Service found 78 per cent. of the rural homes in a certain county unprovided with sanitary conveniences of any kind?

Hookworm enters through the skin?

When Medicines are not Required or are Useless.—Promoters of proprietary "uterine tonics" would have their preparation administered to girls and to pregnant women whether indicated or not and in conditions where medicines plainly can do no good. The testimony of E. E. Montgomery, Professor of Gynecology at Jefferson Medical College, Philadelphia, in the "Cardui" trial forcibly brings out the objections to the indiscriminate administration of medicines to girls and women and the futility of their use in cases which need surgical attention. Regarding the administration of "tonics" to girls at puberty he said that to advise a girl who is undergoing a physiological process that she must take some medicine which contains alcohol or any habit-forming drug at this period of her life, which is the most impressionable period of her existence, is doing that which is placing her future in peril, and is without any possible benefit. Regarding the administration of a "tonic" such as Wine of Cardui is supposed to be, he testified that it can do nothing but harm; that a woman because she is pregnant, pregnancy being a physiological process, does not need medicine, but needs attention. Regarding the use of medicines in uterine prolapse as a means of strengthening the unstriped muscle and thus to help the muscle to perform its work to hold the womb in place, Dr. Montgomery explained that the unstriped muscle in the women is not likely to be affected by medicine and that the tissue outside the womb is unlikely to be affected by medicine; to give medicine in the case of a woman who has prolapsus is just about as reasonable as to bathe one's suspenders with a solution when the elastic tissue has been destroyed from them (*Jour. A.M.A.*, May 6, 1916, p. 1481).

What is a "Medical Authority?"—There has been a tendency to look upon publishers of text books as authorities and not to consider a physician as an authority on a certain subject unless he has written a text book on it. That the publication of a book does not prove its writer to be an authority is the opinion of J. Clarence Webster of Rush Medical College expressed at the Cardui case which is being tried in Chicago. Having referred to Frank Billings as an authority, Webster was asked to define the term "authority." He replied: "As far as a human being can be an authority on anything, I would regard a man who had worked at a particular subject in a scientific manner over a period of time, and who had more experience in that subject than other people, or most other people, as the best human authority that could be found." Asked if a man was more of an authority if he had written a book, Webster replied: "Often less in the eyes of the world" (*Jour. A.M.A.*, April 29, 1916, p. 1410).

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Original Articles

A REVIEW OF MEDICINE AND SURGERY, WITH ESPECIAL REFERENCE TO THE EUROPEAN WAR.*

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MARQUETTE, MICH.

Before proceeding to give you a brief survey of the salient points in the field of medicine and surgery in the last year as gleaned from reading the literature, permit me to thank you for the distinguished honor you conferred upon me last year in electing me President of this Society. To be elevated to this position is an honor of which any man should feel proud.

In the last two years an enormous medical and surgical literature has grown up, so that no one can review it without referring to the terrible conflict between the nations which is now convulsing Europe.

TYPHOID FEVER.

In the first place, let me touch briefly on typhoid vaccination. To protect against infection with typhoid, the value of subcutaneous injections of dead typhoid bacilli has been well established. The occurrence of typhoid among troops in the field, during the present war, who had received protective inoculations will undoubtedly determine this fact beyond any question. From a study of accurate observations in hundreds of thousands of cases Harris and Ogan[1] believe there is no doubt as to the protection offered by antityphoid vaccination in all but a relatively insignificant few. Sir Frederick Treves is credited with the statement that "Since the beginning of the war there have been only 421 cases of typhoid fever among the British troops; 305 were in men who were not inoculated. There have been thirty-five deaths. Of these deaths, thirty-four were men who had not been inoculated within two years. Only one death occurred among soldiers who were inoculated, and that man had only been inoculated once."

Krumbhar and Richardson[2] have collected and tabulated reports of over 1800 cases of typhoid fever treated by the subcutaneous injection of typhoid bacilli. Ninety-five per cent. of these cases showed favorable results, thirty-five of the thirty-nine observers consider the use of vaccines a useful therapeutic measure.

Concerning typhus fever, a knowledge of the etiology and means of transmission of typhus fever has already brought about marvelous results in preventing and wiping out the disease after it had apparently become firmly established in extensive epidemic form. When the medical history of the present war is written, there will probably be no brighter page than that upon which is inscribed the record of American physicians and nurses in Servia in eradicating this disease.

GUNSHOT WOUNDS IN THE PRESENT WAR.

In a review of this subject[3] Dr. Louis A. LaGarde points out that military surgery has never before held the important place with the medical profession that it does at this time.

Infection of gunshot wounds and wounds in general has been exceedingly prevalent during the present war. Generally the infection is caused by the bacillus of Nicolaier or that of Welch, accompanied by streptococci and staphylococci. Fleming believes that the staphylococcus albus favors the development of the bacillus of Welch and promotes the incidence of gas gangrene.

First aid treatment at the front is not receiving much favor, but it would seem that if the skin were first sterilized with tincture of iodin, half strength, much more favorable results would be obtained. Those familiar with the widespread infection in contused and lacerated gunshot wounds have never advocated the use of a skin disinfectant and a first aid dressing with the hope of removing the deep-seated in-

*President's Address, delivered 51st Annual Meeting M.S.M.S. held at Houghton, August 15, 16 and 17, 1916.

1. Journal American Medical Association, Jan. 2, 1915.
2. American Journal of Medical Sciences, March, 1915.
3. Surgery, Gyn. and Ob., May, 1916.

fection. The chief difficulty in the care of war wounds is the inability of the military surgeon to control environment. In civil practice every facility is at hand at once, while in war time it is hours and often days before the case can be brought under control for proper care and treatment, and during this time infection often spreads and becomes systemic.

As to the management of grave wounds with bone involvement there seems to be two schools, one prompted by the teachings of Sir W. W. Cheyne[4] and the other by Sir Almroth E. Wright. Cheyne believes that these infections are easily controlled by the stronger antiseptics, such as pure carbolic acid or some of its stronger dilutions. He states that the hopeless view of some surgeons of removing infection from this class of cases "is probably founded on experiments by LaGarde and others carried out a good many years ago."

Wright is very much in accord with the views entertained by most surgeons. He believes that a projectile carrying infection, filth, etc., into the wound "will implant them far beyond the reach of any prophylactic application of antiseptics." He advocates the use of early and free drainage; lymph lavage by the use of fermentations which induce active hyperemia. In addition, he employs a hypertonic irrigating fluid composed of 0.5 per cent. of citrate of soda and a 5 per cent. solution of salt.

Dakin and Carrel[5] have advocated the use of a new antiseptic which is made by mixing solutions of sodium carbonate and chlorinated lime. This solution is filtered, and to the clear liquid boric acid is added to slight acidity. The reports from the use of this antiseptic are very encouraging.

Tuffier, consulting surgeon to the French armies in the field, divides the cases of gas gangrene due to the Welch bacillus, into two clinical varieties: (1) hyperacute gangrene, which spreads with great rapidity and ends fatally within twenty-four hours, a variety which is beyond the control of the surgeon; (2) a superficial gaseous gangrene which spreads in the cellular tissue under the skin and is amenable to treatment when early and free incisions are made to relieve the constriction.

Shock is naturally among the more important symptoms of gunshot wounds. Tuffier recommends the use of morphia hypodermatically in the treatment of shock, and attention may also be called to the splendid results obtained in the Russo-Japanese War from the use of the following hypodermatically:

Camphor	1 part
Ether	4.5 parts
Olive oil	.4 part

Incision and excision. As a new feature of treatment, Milligan and others have obtained good results, in specially selected cases, by excising the infected and devitalized tissues and then suturing the wound.

Hemorrhage. External primary hemorrhage is seldom seen in the present war. It is naturally controlled by ligation and constriction at the front. Secondary hemorrhage, however, is more common because of the prevalence of infection. In aseptic cases Tuffier applies ligatures to both ends of the injured vessels in the wound, while in the infected cases he ligates the artery on the proximal side in healthy tissue. Arterial and arterio-venous aneurysms are best treated by longitudinal suture. Spontaneous cure is not uncommon. Treatment of aneurismal varix and varicose aneurism is the same as that of other forms of traumatic aneurism; i. e. rest in bed, immobilization, etc. The operative treatment depends on the vessel affected and the amount of disturbance present.

In all head cases, especially the minor ones, careful examination should be made for any disturbance of cerebral function. This is especially true of the tangenital shots with the new rifle bullet, as it is very prone to fracture the inner table without mutilating the outer table.

Roberts[6] recommends excision of the scalp wound beyond the contused area. When fracture is discovered and lacerated brain tissue is found the spots should be explored, all foreign matter including bone fragments removed and the wound closed with or without drainage. Urotropin (gr. xx., t. i. d.) should be given in all head cases from the date of admission. In penetrating wounds of the head this treatment is applicable to the wounds of entrance and exit.

Wounds of the chest, since the adoption of the new military rifle, were classed as humane until the introduction of the spitze or pointed bullet in the Turko-Balkan War of 1912. Increased use of shrapnel has also caused a great increase in the mortality in this class of cases Wounds from the shrapnel are likened to those due to the old armament used in the Civil and Crimean wars when the mortality was rated from 62.5 to 91.6 per cent. The principal dangers in chest wounds are complications, such as pneumothorax, hemothorax, and infection.

4. Lancet, London, Feb. 27, 1915.
5. Jour. A.M.A., Sept. 4, 1915.
6. Brit. Med. Jour., Oct. 2, 1915.

Pus should be evacuated as soon as discovered. Hemothorax, unless large, needs no operative interference.

The greater use of shrapnel and pointing of the rifle bullet have increased the mortality of abdominal wounds. Many observers comment on the relative scarcity of abdominal wounds in the field hospitals, the inference being that the large majority of this class of wounded do not live long enough to reach the field hospitals.

The introduction of the unstable pointed bullet and the greater use of field artillery has increased the severity of this class of wounds as compared to those caused by the ogival-headed bullet. In seventeen cases of gunshot wounds of the knee in the Santiago campaign by ovigal-headed reduced caliber bullets, there were neither deaths nor amputations and 81.1 per cent. were restored to duty.

Tuffier finds that rifle bullet wounds of the knee-joint usually heal kindly, but injuries of this class caused by shrapnel or shell fragments are prone to suppurate and undergo ankylosis after prolonged convalescence. He prefers resection of the joint to amputation because reamputation of other secondary operation was necessary in 10 per cent. of the cases observed.

Gunshot fractures of the long bones. In these fractures the three prime requisites are drainage, immobilization and frequent re-dressings. In this, as in all other wars, infection in fractures consumes the most of the surgeons' time, and it is pretty constant in bone injuries.

In Belgium and Northern France, the scene of Bowlby's[7] recent military experience, the terrain is thickly inhabited by a population devoted to agricultural pursuits and the raising of live stock. The climate is damp, and sunshine is as rare as cloudy days are in Africa. The soil is necessarily a prolific incubator for all kinds of aerobic and anerobic microbes. Contamination of gunshot wounds in soldiers wearing clothing laden with the dust and mud from such a terrain is the rule. Another factor which has prevailed in the present war to add to the frequency of infection in gunshot wounds is the wide difference in characteristic features of the wounds themselves. In a general way the wounds in the South African War were much less severe. They were inflicted by ogival-headed bullets in the large majority of cases, at battle ranges which approximated half a mile. The bullet was well balanced and generally made a regular impact. Wounds in the soft parts, the joints of bones, and lungs were very infrequent in the Boer War, and less severe than those which occur in the trench fighting in the present war.

Wounds by shrapnel bullets are not so extensive; they more frequently lodge, and they are often multiple. The wounds caused by high explosive shell fragments, bombs, and grenades are so varied that it is not possible to describe any of them as a type. They are all ragged and lacerated. The large fragments tear away limbs or hugh masses of skin and muscle. The neighboring tissues show widespread contusion and extravasation of blood. Wounds by smaller shell fragment and from bombs and grenades are lacerated in proportion to the size of the fragment and they are nearly always multiple. The wounds in this war stand out very distinctly as a class by themselves among war wounds and they have none of the features of the wounds inflicted in civil life.

All gunshot wounds in this war are infected at the time of the receipt of the injury, fecal microbes and streptococci being the chief offenders. The method of treatment of infection recommended by Sir Almroth E. Wright is also preferred by Bowlby. Wright's references to the bacterial flora of war wounds follow closely the findings of Fleming and others. The anerobes attack devitalized tissue by preference. "The more severe and extensive the injury, and the more tissues are lacerated and devitalized, the more the wound is likely to be badly infected."

The treatment of advanced sepsis in wounds is best met by prolonged immersion in an antiseptic fluid whenever this is possible, or constant irrigation with saline or antiseptic fluids. The saline hypertonic treatment finds its greatest use before the separation of the slough, and up to the time that a granulating surface has appeared. The subsequent use of nitrate of silver and sulphate of zinc is advisable. The hypochlorous acid treatment, as advocated by Dakin and Carrel is a most important advance in wound treatment, more especially when used in recent wounds, before suppuration has occurred, and it has to a great extent displaced all other forms of treatment in many of the casualty clearing stations. It is believed to have prevented or arrested the progress of gas gangrene in many instances.

The antiseptic developed by Dr. Dakin, and tried out in a thoroughly convincing manner at the Carrel Hospital, is an aqueous solution of 0.5 per cent. concentration of sodium hypochlorite and is made as follows: Dissolve in a large bottle 140 grams of dry carbonate of soda

7. London Lancet, Dec. 15, 1915.

with ten liters of sterile water. Add to this 200 grams of chlorid of lime (bleaching powder) and shake well. After half an hour siphon off the clear fluid into another bottle through a cotton plug or filter paper and then add forty grams of boric acid to the clear filtrate. This solution is neutral to litmus, is nonirritating and is the proper strength for wet dressings and irrigations. A stronger stock solution of 4 per cent. may be made, but the quantity of boric acid to be added must be determined exactly, so that the solution is just acid to phenolphthalein suspended in water; otherwise the solution decomposes very quickly. The solution should be made fresh every three or four days, and the dry stock ingredients should be kept in covered receptacles. Besides its proven efficiency, another point worthy of consideration is that this solution can be made up, even in small amounts, at a cost of only about 5 cents for ten liters.

Dalton[8] says the results obtained by the use of sodium hypochlorite in the present war have been so remarkably satisfactory that he believes it should be the method of choice. The advantages observed from the use of sodium hypochlorite solution in the treatment of septic wounds are: 1. The simplicity and cheapness of preparation of the antiseptic. 2. Being non-toxic and non-irritating to the tissues, when properly prepared according to Dakin's formula, the hypochlorite solution may be safely used in large quantities over long periods of time without ill effects. 3. The deodorant action of the solution is remarkable. The fetor from gangrenous tissue usually disappears in twenty-four hours. 4. The rapidity with which sloughs separate and clean granulation tissue is formed in a wound under its influence. 5. The infrequency of re-dressing required by cases treated with hypochlorite compared with the constant change of dressings required in large wounds with other forms of antiseptics. 6. The fact that injections of the hypochlorite solution into rubber tubes used in the dressings may with safety be entrusted to very imperfectly trained orderlies without fear of ill results, once the case has been adequately dealt with by the surgeon.

Gray[9] cites the following general considerations governing the use of salt solutions: 1. The solution must be brought into contact with every infected part of the wound. 2. Hypertonic solutions stimulate a more or less profuse flow of lymph containing antibodies, and thus bring about what has been called "lymph lavage" of the tissues lining the wound. 3. Isotonic or physiological salt solution stimulates diapedesis, that is to say, it brings about a concentration of leucocytes in these tissues. These phagocytes are in large measure shed into the wound cavity and form pus corpuscles. 4. The microörganisms causing the infection make their way into the tissues lining the wound in a few hours. The rapidity and depth of penetration vary according to the kind of organism, the amount of devitalization of the tissues, and the method of treatment. 5. The infective material is carried by the missile into the depths of the wound; any superficial treatment is therefore of no practical benefit, except in preventing fresh infection. 6. The presence of effused fluids, whether blood or lymph, of foreign bodies, and of badly lacerated or necrotic tissues, favors the rapid growth of organisms in the wound and hinders their expulsion from it. 7. Wounds deteriorate in condition, and inflammation may become rampant, especially during transport, if the wounded part be not properly fixed and supported, even though no fracture be present. 8. A patient whose vitality is very low, owing to the severity both of the wound and sepsis, is unlikely to fight serious infection successfully and to survive a conservative operation and the strain which after-treatment involves. The question of amputation must therefore occupy a far more prominent place in the mind of the surgeon than it does in civil practice. 9. The method of treatment must therefore vary according to the nature of the chief infecting organisms, the physical character of the wound, the general condition of the patient, and according to whether or not he is to be transported within a short time.

At the base hospitals the occasions for transfusion are pratically limited to cases of secondary hemorrhage or cases of severe wasting sepsis. For this operation a simple and convenient apparatus for vein-to-vein transfusion appears to be desirable, and these conditions are fulfilled by the apparatus devised by Dr. Vincent.

One of the surgical advances of the present war has been the recognition of the dentist as a necessary unit in the organization of a military hospital. This has been largely brought about by the present day trench warfare. The latter leads to the production of a large number of face or jaw wounds, involving usually a great loss of substance, in the form of bone, teeth, and soft parts. So valuable has this work became that every large military hospital now has its surgical dental department, which works

8. British Medical Journal, Jan. 22, 1916.
9. Brit. M. J., 1916, 1, 1.

in conjunction with the other surgical services and supplements certain procedures which are indispensable as regards bringing about a favorable result.

There can be no question of the value of placing the teeth in order, as shown by the improved digestion and general good health following this work; but the great usefulness of a dental department to every hospital has only been recently generally recognized. In many instances the complications following operations are directly traceable to an unhealthy condition of the mouth. So true is that that the careful surgeon is beginning to insist upon a thorough inspection and treatment of the teeth, whenever it is practicable, before undertaking any major operative procedure.

The history of all field surgery so far has been that radical operations performed near the firing lines or field hospital have greatly increased the mortality of war surgery. The cases thus treated have to be retained and are subject to the necessarily meager after-treatment and attention or are transported to a base hospital a few hours after operation; in either case the resisting power of the patient being considerably lowered as a result. In addition to this, the usually hurried character of the work is not conducive to efficiency in connection with prolonged or complicated operations nor are the conditions in field hospital work ideal with reference to carrying out aseptic operations or the preventing of infection during the after-treatment.

As in all other military sanitary formations, iodin, preceded by benzin or alcohol, is universally used in the preparation of the skin and wound for operation. The wounds are thoroughly cleaned out with alcohol, ragged tissue removed, but no effort is made to search for foreign bodies, only such pieces of clothing and metal being removed as can be easily seen and reached. A number of these units are beginning to use the Dakin fluid for moist temporary dressings, and reports indicate that it is giving satisfactory results.

Ritschl[10] has formulated twelve rules or commandments which are posted in the German field hospitals and circulated broadcast throughout the country. They contain the following instructions as to the prevention of residual deformities. 1. Rest in general is detrimental to the function of joints and muscles. 2. Importance of medico-mechanical after-treatment. 3. Restrict rest to the minimum of time, and even then change the position of joints frequently. 4. Massage and electricity. 5. Special care of deltoid and quadriceps femoris muscles. 6. Suggestion for the best position for each individual joint. 7. Do not allow the hand to drop when the arm rests in a sling. 8. Preserve mobility of fingers by active motion. 9. Respiratory exercises. 10. For interstitial hematoma, elevation, heat and massage. 11. Insist on consultation. 12. Pay special attention to the mechanics of the after-treatment.

Cheyne, Bassett-Smith and Edmunds were appointed as a committee by the Director-General of the Medical Department of the Navy, in December, 1914, to inquire into the best method of treating wounds sustained in action, especially during the early period after their infliction. Among other things, they state[11] that when the patient arrives at the advanced dressing station, the treatment depends on circumstances: 1. If a large number of wounded have to be attended to, patients who have been treated in the above manner can wait, unless a good many hours have elapsed since the injury. 2. If it is a large or complicated wound, e. g., a compound fracture, it will be well in the first place to clean and disinfect the skin, preferably with one in twenty carbolic lotion, then wash out the wound with peroxid of hydrogen and again one in twenty carbolic lotion, remove pieces of clothing or accessible pieces of shell, clip away any badly soiled tags of tissue and arrest the bleeding. The wound being dried and held open, it can then be powdered with borsal and some cresol paste left in various parts of the wound. If it is widely open it may be well to put in a few interrupted sutures to bring the edges somewhat together and prevent the escape of the antiseptic , and finally apply antiseptic dressings. 3. If it is not a large wound, if the clot seems solid and it has been well powdered and plenty of paste introduced into it in the first instance, it is quite possible that sepsis may not occur and if that seems likely all that need be done would be to squeeze a little fresh paste and dust some borsal powder over the surface and the skin around and apply a fresh antiseptic dressing. These wounds will probably not require further treatment until they arrive at the base hospital.

Should the wound be free from sepsis or inflammation on arrival at the base hospital, it should not be opened up or syringed or otherwise interfered with. Some fresh paste, diluted if necessary, may be applied over the surface and the skin and a fresh antiseptic dressing

10. Deutsche Med. Woch., Jan. 28, 1915.

11. Jour. Roy. Naval M. Service, 1915, April.

put on. If, on the other hand, there are signs of sepsis the wound must be opened and drained, and otherwise treated according to the experience of the surgeon.

Tuffier[12] emphasizes the importance of early disinfection of wounds. Of 1,000 amputations, 75 per cent. were due to the long duration of the treatment of wounds and their late complications, such as neuritis, osteitis, and vicious scars. Disinfection after the first forty-eight hours is practically impossible, but disinfection within the first few hours is very effective.

The number of bacteria in a wound and their diffusion through the tissues are in proportion to the length of time that has passed since the wound was made. As early as the Russo-Turkish War of 1877, Reyher showed that in injury of the joint there was a mortality of only 13 per cent. in the cases treated during the first twelve hours, while among those treated later the mortality was 61.5 per cent. The same thing was true of compound fractures, the mortality rising after the first twelve hours from 18.1 to 35.5 per cent.

OPERATIVE TREATMENT OF THE ABDOMINAL WOUNDS IN WAR.

Enderlen and Sauerbruch[13] recommend prompt operative interference in abdominal wounds involving the gastrointestinal tract. They treated 227 soldiers for gunshot wounds of the abdomen. They operated on 211; of these 92.9 per cent. exhibited gastrointestinal perforation; in 4.8 per cent. there was no intestinal nor visceral lesion, while 2.2 per cent. suffered severe injury to the liver. Operative treatment cured 44.4 per cent. of the 221 operated upon. Of the five cases sustaining injury to the liver, three or 60 per cent. recovered under operation.

Concerning the difficulty of determining abdominal perforation early, the authors call attention to costal respiration which they consider of the greatest importance in determining the presence of intestinal lesion. Prompt operation is called for when the surgeon has reason to believe that hemorrhage is taking place.

Richards[14] points out that death in uncomplicated cases of gunshot wounds of the small intestine is not usually due to the escape of feces and general peritonitis, but to a progressive intestinal paralysis and distention spreading upward from the injured coil. Operation in such a case should include the resection of the injured portion together with as much bowel above it as would otherwise remain in a condition of paralysis. If this be done sufficiently early, there is a prospect of saving a fair proportion of cases.

In a review of gunshot wounds of the chest in the present war LaGarde[15] states that in a group of 168 cases made up of mild and severe cases, there were twenty-seven in which the lung was wounded without evidence of effusion. The hemothorax was sterile in 114 cases and forty-eight of these were so large—generally forty ounces or more—that they had to be treated by aspiration. Death occurred in twenty-six cases with effusion, and twenty of these deaths resulted from sepsis. One died on the third day as the result of simple hemorrhage of the lungs. There were forty-eight septic as against 120 effusions, of which forty-eight were large.

In another group of 160 cases of hemothorax, in which only the severe cases were recorded, only five cases of simple wound of the lung without effusion were noted. The hemothorax was sterile in eighty-six cases, and of these forty-one were aspirated. There were fifty-three cases which survived after resection. There were twenty-one deaths and the effusion was septic in sixteen of these. Again, there was only one death from simple hemothorax which was complicated by a wound of the heart. The aggregate was sixty-nine septic as against ninety-one sterile effusions of which forty-one were large.

A study of the two groups referred to shows that infection was present in one-third of the cases recorded and the large effusions were just as often septic as sterile. The chance of infection has to be considered in every case of hemothorax. The authors whom LaGarde quotes believe therefore that the wounded men should be moved, as soon as possible after the danger from hemorrhage has passed, to a station where the infection can be promptly dealt with.

The following interesting summary is given by the authors: 1. The total mortality of chest wounds reaching hospital care was 10 per cent. 2. Simple hemorrhage never causes death after the third day. Sepsis is the principal cause of mortality from this time onward. 3. Primary infection occurs in 25 per cent. of the effusions and it is fatal in one-third of the cases. 4. A sterile hemothorax should be emptied by aspiration except when it is of small size. 5. Infection should be suspected in all cases which are not progressing favorably after the fourth day. If it cannot be diagnosed with

12. Bull. Acad. de Med., Par., 1915, LXXIV, 314.
13. Med. Klin., Berl., 1915. XI, No. 30.
14. Brit. M. J., 1915, II, 213.
15. Surg. Gyn. and Ob., March, 1916.

certainty on clinical features alone; a sample of the fluid withdrawn should be examined bacteriologically. 6. A hemothorax fluid which looks red and innocent may nevertheless be heavily infected. 7. The chest should be opened as soon as possible in all cases of infected hemothorax. 8. The signs of air as well as blood in the chest may be caused by foul gas evolved in the course of an infection by anerobic bacilli. Immediate resection is then required.

Sir John Rose Bradford[16] who has studied many hundreds of cases of thoracic injuries among the wounded in France, details his experience. The larger part of the article is devoted to hemothorax. This may follow a nonpenetrating or a penetrating injury. In the former variety, the hemothorax is not markedly different from the common variety, is usually of small size and not uncommonly is infected. In penetrating wounds, hemothorax may result when the wound is not in the chest itself, but in the neck, arm or upper abdomen, and further it may occur on the opposite side of the body. Double hemothorax is not uncommon and may go on to recovery. Subcutaneous emphysema is often present. In a series of 450 cases of hemothorax, about 25 per cent. was infected.

Sterile hemothorax.—Hemotysis is present in a large number of cases but is only very rarely fatal. Fever is almost always present, usually not higher than 102°; but if expectant treatment is pursued this may continue indefinitely. If, however, the fluid is aspirated, many of the cases become at once afebrile and go on to convalescence. The second group, however, even after paracentesis, may continue to run temperature suggesting infection, when the cultures are all sterile. Such cases, however, gradually come down to normal after a few weeks and get well. In the first twelve to twenty--four hours after injury, well marked physical signs are absent, even if very marked symptoms are present. Displacement of the heart may be found, with signs denoting poor entry of air into the chest, but the percussion note is not markedly dull. Twenty-four hours later, however, typical signs of effusion are present. If the fluid is not aspirated marked retraction develops.

Knee Joint.—Lockwood[17] bases his observations upon a study of sixty cases. The most important points in connection with such wounds are the following: 1. That all foreign bodies, whether metal or loose bone, should be removed from the knee joint at the earliest possible moment. 2. Perfect immobilization is absolutely necessary. Do not start passive movements too early; wait at least three weeks after the inflammation has subsided. 3. Absolute complete excision of all necrotic or even edematous tissue. 4. The capsule should be closed at the first operation if at all possible. 5. Antiseptics, except sterilized solution and formalin should not be introduced into a joint. 6. Tubes should never traverse the joint surface as in Barnard's method. 7. Patients should not be moved till one is satisfied that infection has been successfully combated.

There was only one death. Amputation was necessary only three times, and free movement of the joint was obtained in forty-nine of the cases.

Leslie[18] calls attention to the gases used in the European War which consist mainly of chlorine and occasionally bromine. The gas is projected from cylinder tubes, and being heavier than air, it floats along the ground. The main effect of the gas is to produce an acute irritation of the respiratory mucous membrane which may be fatal at once or may result in later complications. The complications which arise are edema of the lungs, acute laryngitis and bronchitis, broncho-pneumonia, gangrene of the lung, or distant lesions resulting from changes in the blood. Gangrene of the feet has resulted. Kidney irritation is common, and disorders of the nervous system result frequently.

Kirchenberger,[19] in dealing with shot-wounds of the skull emphasizes special points regarding how to operate in the cases. In general avoid all unnecessary trauma. Thus local anesthesia is to be preferred in every case. One of the cocain preparations with the combination of adrenalin obviates the necessity of using hemostatic sutures. Scopolamin, otherwise recommendable, should not be used because it increases blood pressure. In tangential shot-wounds it is only necessary to enlarge the wound slightly; in penetrating wounds the incision should connect the point of entry and exit. Extensive osteoplastic flaps are never necessary nor is it necessary to separate an extensive surface of the periosteum in case underlying bone need be removed. The object of this simplified technic is to save unnecessary shock, unnecessary chances of bone necrosis, prolonged operation and many assistants.

The second point emphasized is concerning transportation, which the author insists should

16. The Lancet, Jan. 29, 1916.
17. Brit. Med. Jour., Jan. 29, 1916.
18. Am. Med., 1915, X, 875.
19. Commander of the Field Hospital, Muenchener Medizinische Wochenschrift, Jan. 25, 1916.

be done as soon and as rapidly as possible, immediately after receiving the skull injury. The soldier should be at once taken to the surgical hospital and there permitted to rest for at least fourteen days. Many cases with unconsciousness, wake up after several days of rest and improve in the most unexpected fashion and go on to improvement and even recovery, while operated cases that have the advantage of absolute rest sometimes surprise the surgeon in the way they improve from an almost hopeless condition. Under no circumstances should a freshly operated patient be subjected to a prolonged transportation. This is dangerous.

Kausch[20] says the majority of military surgeons at present hold that gunshot injuries should be operated on in the trench warfare if they are received in the first eight to twelve hours, if they can be operated on under aseptic conditions, and if operating upon them does not necessitate putting off other more hopeful cases, but most surgeons advise against operation when the armies are advancing or retreating. This was the position taken at the Congress of Military Surgeons in Brussels. Only Enderlen and Sauerbruch advised operation while the armies were in motion.

Kausch has worked in Belgium, France, Galacia, and Russian Poland, so that he has had experience under the most varied conditions. He advises operation in all cases of intestinal perforation, no matter whether the armies are entrenched or on the march. Most cases are not in a condition to be operated upon after twelve hours, but he has seen cases saved after twenty hours.

Ferraton[21] states that the kind of disinfectants used in wounds is not so important as the care and attention with which they are applied. He prefers irrigation with potassium permanganate, followed by hydrogen peroxid. Gauze moistened with alcohol or ether is the best dressing. The dressing should be left on several days unless there are signs of infection, when the wound should be opened up and irrigated frequently.

In joint lesions Ferraton practices early arthrotomy; if this is not effective resection facilitates drainage. Conservative treatment is the rule in injuries of the thorax unless it is necessary to control severe hemorrhage. If a pleural effusion becomes infected, pleurotomy is indicated. All wounds of the skull should be trephined, disinfected and drained. The brain should not be explored for deep projectiles. Operation should be performed in injuries of the abdomen to control intra-abdominal hemorrhage. In other cases expectant treatment is favored.

According to Schloessmann[22] one of the most unpleasant complications in military surgery is secondary hemorrhage after gunshot wounds, which is due either to secondary erosion of the blood vessel or primary injury of the vessel by the bullet on the field.

Another important point in the treatment of secondary hemorrhage is to bear in mind the possibility of its occurring. The only certain and effective treatment is ligation of the blood vessel at the place of injury. Tamponing, pressure, and ligation at any other point are only makeshifts.

Carles and Charrier[23] find that ethyl chlorid anesthesia is quite as valuable in operations of forty-five minutes' duration as in those of five minutes', though it has ordinarily been used heretofore only in very short operations. It is particularly valuable in military surgery because of the saving of time. It only takes from a few seconds to two minutes for the patient to become anesthetized, and about the same time for him to awake from the anesthetic. The toxic action is very slight; there is seldom vomiting; it is much milder than after choloroform or ether; albuminuria seldom follows, and if it does, it is slight in degree. This makes it particularly valuable in cases of shock, feeble pulse, etc. They have used this form of anesthesia in 200 of 700 cases operated upon during the past five months. In administering it several cubic centimeters should be given at first to obtain complete anesthesia; after that about 0.5 cubic centimeters every three or four minutes. The three or four respirations of pure air, when the mask is raised to give the ethyl chlorid, are generally sufficient to prevent asphyxia. There is no danger of heart failure as with choloroform, and in the rare cases where there is difficulty in respiration a few movements of artificial respiration generally restore the patient.

Schwartz, Bouvier and Caudrelier[24] relate their experience in the treatment of abdominal injuries at the front.

Schwartz operated upon nine cases, eight of them with perforation of the small intestine, and one without any intestinal lesion, but with injuries of the spleen, mesocolon, and great omentum. There were two complete recoveries,

20. Berl. Klin. Woch., 1915, LII, 1321.
21. Lyon chir., 1915, XII, 565.
22. Beitr. z. klin. Chir., 1915, XCVI, 129.
23. Prog. med., 1915, XLII, 478.
24. Bull. et mem. Soc. de chir. de Par., 1915, XLI, 1257.

two operative recoveries, and five deaths, but one of these deaths was due to the carelessness of the patient, not to the operation. He was getting along splendidly on the sixth day, but that night got up to go to the window to look at a fire and the next day develped peritonitis.

Bouvier and Caudrelier report thirty-three cases of laparotomy for abdominal injuries. In all there were eighteen deaths and fifteen recoveries, or a total mortality of 54.5 per cent. The mortality was 66 per cent., in injuries of the small intestine, 40 per cent. in injuries of the large intestine, 60 per cent. if only perforating injuries of the large and small intestine are counted. They were favored by the fact that they were very near the front and their patients only had to be carried a few meters; but their mortality is increased by the fact that they operated on all cases as they came, no matter how severe the injury or in what condition of shock the patient was at the time.

They generally operated through a median incision; sometimes they merely enlarged the existing wound. When there was an evisceration of the intestine they sutured or resected it outside before opening up the abdomen. Perforations of the intestine were treated by suture; if there were multiple perforations in a short segment the intestine was resected. They used only end-to-end suture. In almost all cases the peritoneum was irrigated with ether after the operation; it was not always drained. Every effort was made to make the operation as short as possible. These results are decidedly in favor of operative treatment.

Quenu quotes a report of Sencert, who prefers expectant treatment. Sencert had fifty-eight cases, with only thirteen recoveries, a mortality of 77.5 per cent., while Bouvier and Caudrelier had only 54.5 per cent. mortality from operative treatment. Moreover, Quenu concludes from a study of Sencert's cases that not all of them were perforations of the intestine, so that, in addition to having a higher mortality, he had less serious cases. The published cases of various other authors are reported. Summing up all the operative cases, the average mortality is 62 per cent; while the average mortality of the conservative cases is 78 per cent. Quenu concludes that operation is indicated except in some cases of tangential shot with both orifices posterior, indicating that the intestine has not been perforated. It is the perforation of the intestine, not of the peritoneum, that is most significant.

Gobel[25] from a comparison of the statistics of the Balkan War and the results of the present European War, concludes that there has been no improvement in the treatment of wounds of the hip. A large percentage of the wounds are infected, and in the Balkan War 60 per cent. of the infected cases died.

Noehte[26] reports twenty cases of injuries to the spinal cord, nine of which were operative cases. Of the eleven cases not operated, nine died from complications. Of the nine operated cases, two improved after operation, one improved after the opening of an abscess, and one case showed improvement with the exception of motor symptoms. Three cases were not improved, one died of meningitis, and one died of respiratory paralysis. The author recommends early operation of spinal cord injuries. The third day should decide for or against laminectomy.

Schmid[27] has treated twenty-eight cases of gas phlegmon and concludes from his experience that in cases of gas phlegmon with gangrene, amputation should be performed at once. Amputation should also be performed in cases of deep gas phlegmon with fracture. In superficial gas phlegmon with fracture, deep incisions and excision of the diseased part of the skin and subcutaneous tissue is sufficient. In deep or superficial gas phlegmon without gangrene or fracture, incision and radical excision of the affected parts is indicated.

Zahradnicky[28] has had in all 200 cases of gunshot injuries of large joints, 133 of which were non-infected and sixty-seven infected. He had only four deaths from severe sepsis. One a case of hip injury and the other three of the knee, making a total mortality of 2 per cent. In the aseptic cases satisfactory function was restored in 79.7 per cent.; in 20 per cent. there remained either pain or limitation of motion. In the septic cases the functional results were good in only 17.9 per cent. of the cases; there was limitation of motion in 69.2 per cent. and total ankylosis in 12.9 per cent.

Now, gentlemen, in this retrospective glance at the literature, I have only striven to touch the high spots, as it were, because the field is so vast and varied, embracing as it does almost every phase of medicine and surgery, that it was impossible to describe and discuss even in a cursory way the many varied pathological conditions and injuries received by the soldiers on European battlefields, but if I have presented

25. Munchen, Med. Woch., 1915, LXII, 721.

26. Deutsche Med. Wchnschr., 1915, Jan. 1.
27. Wien. klin. Wchnschr., 1915, XXVIII, 556.
28. Beitr. z. klin. Chir., 1915, XCVII, 452.

this subject in a way to excite your interest in it, as internists and surgeons, I shall feel that this address has not been prepared in vain.

THE EARLY HISTORY OF MICHIGAN'S STATE BOARD OF HEALTH.*

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Aside from this topic, the remainder of this meeting is devoted to "Sanitary Laws and Administration;" therefore it seems best that this topic be so dealt with that it shall contribute to the main important purpose of this meeting. I believe that can be done by so extending the "Early History" as to include the *origin of the plan* on which the Michigan Board was established, the nature of that plan, how and why it came to be adopted, how it differed from any that preceded it, and why any person who undertakes to influence Public Health Legislation and Administration may well consider the original plan and main purposes of the Michigan State Board of Health.

The parentage of a dominant idea is so important that I begin by stating that the fundamental idea on which the plan of the Michigan Board was based was first advanced by that eminent philosopher of the last preceding century, Herbert Spencer. This may seem to you to be impossible if you recall the fact that Herbert Spencer wrote disapprovingly of boards of health. But he wrote more powerfully on the subject of education, and it was *that* work of his that supplied the impetus and the reason for the establishment of the Michigan State Board of Health, which was created on a new plan quite different from any preceding board of health.

About 1857, D. Appleton & Co., of New York, published a small book by Herbert Spencer on "Education." In 1861 it was studied by the young man who in after years, was the author of the Michigan State Board of Health. The young man was a medical student, and what interested him in the little book was a conclusion which Spencer propounded with such detail and forcefulness of argument as to compel its acceptance, and which was: "That Knowledge is of most Worth which Tends Directly Toward the Preservation of Life." The young man served about three years, 1862-5 in the Medical Surgical Department of the U. S. Army, where he was trained in Army Hygiene; because surgical operations, although important, must be preceded and supplemented by daily sanitary care of all of the soldiers. For a few years, 1866 to 1870 the ex-surgeon was in civil medical practise, and unhappy because he could not exercise or freely advise sanitary care without taking the time and energy from attention to his professional occupation. In January, 1870 he received the first Report of the Massachusetts State Board of Health, which board was to deal with nuisances and other subjects, much the same as did all boards up to that time, but was a *State* Board, to take action on appeal from local boards and in cases too large to be dealt with by smaller boards. It was much such a board as Herbert Spencer had disapproved; but to the student of Spencer, the ex-army surgeon who was daily regretting that he could not serve the public by sanitary measures as he had served the soldiers in the army, the Massachusetts Report served as a stimulus to energetic effort to secure for Michigan a State Board of Health, planned to *teach* the people of Michigan "That Knowledge of Most Worth;" to be a State Educational Institution, and supreme in that one particular; its functions being to collect, create and spread among the people information from every available source relative to the causes of deaths, the causes of sickness, anl the best measures for their avoidance and prevention. He began at once to advocate the plan, writing to individuals, to medical journals and to the public press. In the year 1870, he took to the capitol of Michigan a Bill to establish a state board of health, which he hoped the legislature would enact into a law. He contemplated an innovation, in all respects; there was then only one state in which a state board of health existed, and its plan was not then exactly the same as the one he proposed for Michigan, which he intended should be a *state educational system for the promotion of the public health.* He took with him a draft of a petition which he afterwards had printed, and from time to time, distributed about the state, setting forth that the medical profession was in possession of much knowledge which, if it were imparted to the people generally, would lead to the reduction of a large portion of their sickness and deaths; it prayed that the legislature establish a state board of health, to collect and disseminate knowledge useful for the promotion of the public health. He worked strenuously and continuously toward that end. His plan gradually met with favor, was indorsed and advocated by the State Medical Society, and in 1873, the Bill became a law. Meantime copies of the Bill, printed for use in the legislature of 1871, were sent to other states, with statements of arguments for the plan; and movements for similar action in other states were started, with the result that in several states the same Bill was used, and soon most state boards of health were working on plans somewhat similar to that of the Michigan Board. Not only so, but some branches of the educational system, first thoroughly established by the Michigan Board, began to prevail in the government health services throughout most of the civilized world; because the Michigan board collected facts from every country, and, in return, sent its publications, its methods and in many cases its wording or translations thereof were freely used. It daily collected from the local health officials in Michigan the facts of the occurrence of dangerous communicable diseases, through a law requiring householders and physicians to promptly report every such case. This made it possible for the State Board to *distribute*

*Read before the Civic Club, Kalamazoo, Michigan, May 4, 1916.

its useful knowledge of the restriction of each disease, *to the household* and neighborhood in which such disease started or occurred. This came to be a very important branch of its constant educational work; and is believed to have saved, from premature death, thousands of people in Michigan, more especially of children and young persons. I believe *that system of work should still be vigorously done.*

While the main functions of the Michigan State Board of Health were to learn and to teach, another important function was to have thorough supervision over the work of *local* health officers, whose duties were not so *much to teach,* except in co-operation with the State Board, but to *act,* for the restriction of diseases, for the control of movements of persons and things to that end, for the disinfection of infected articles, for the abatement of nuisances, etc.

The original plan for Michigan was that the State Board should act in a manner analogous to the action of a *general* in the army, while the local health officers and the local boards should act in a way analogous to the line officers and the men in the line of battle. As dangerous communicable diseases are the greatest causes of deaths, this is essential.

For over thirty years, ending in 1905, its originator was the executive officer of the Michigan State Board of Health; and as such, he acted as a public *teacher* of sanitation, involving, as that did, daily studies in several branches, in order to keep in advance of the people then being instructed in many subjects of vital interest.

In 1875, while a member of the Michigan State Board of Health and very effectively fulfilling its *educational* plan, Doctor R. C. Kedzie caused the inauguration of the "Farmers' Institutes" which have been a powerful factor in popularizing and therefore in utilizing all of the sciences bearing on argriculture, including sanitation; and later the State Board of Health in Michigan established, on the same plan, the "Sanitary Conventions." At both of these courses of public meetings during several years, the members of the State Board of Health, including the secretary were lecturers on sanitary topics. A "Teachers' Sanitary Bulletin" was published regularly by the board. When it was learned that those *diseases which cause most deaths were mostly communicable,* a law was passed providing for teaching in the schools of Michigan, the principal modes by which the dangerous communicable diseases are spread, and the best measures for their restriction and prevention. The State Board was, *in every year,* required to supply to the teachers the latest exact information. So long as the first secretary continued in office, he actively participated in fulfilling that beneficent law; and when soon afterwards that law was disregarded, and possibly repealed, knowledge of it was disheartening; because that law in one way perfected a very important line of work, and in another way it was the opening wedge for an extension of the most important work which it is possible for a State Board of Health to undertake. The law and its plan required the State Board to learn what were the causes of the *most deaths* in Michigan, and what were the causes of the *most sickness.* It was found that the most *deaths* were caused by the dangerous communicable diseases, such as tuberculosis, pneumonia, typhoid fever, scarlet fever, diphtheria, measles, and whooping-cough. When the Board was first established not all of the foregoing diseases were known to be communicable, but at the time that law for the teaching in the public schools was enacted several of them were known to be communicable, and how to restrict and prevent them was also established. Therefore that law made it possible in every year to teach those facts to the children and young people at ages when most endangered, while the teaching of the adults was continued by the Board by its usual methods. Thus that "knowledge of *most worth" to the most people,* so far as that was practicable, was systematically and continuously maintained. It is much to be regretted that this exceedingly important start toward the rounding out of the plan of the State Board, was not thoroughly explained to the principal educators of the state so that the law might have been saved, but it seemed to be so well received by all classes of people, that any necessity for such action was not perceived, and perhaps did not exist, the law being simply considered to be of no consequence by the new executive officer, appointed politically instead of by the Board as had been the previous method. An idea of the immense probable loss to the people of Michigan caused by the lapse of that law, can be partially gained by considering the cases and deaths from *tuberculosis,* and from the other dangerous communicable diseases which cause most deaths, which have occurred in Michigan in the ten years since that law was permitted to lapse, which might have been prevented by ten continuous years teaching of that "Knowledge of Most Worth" to the thousands of pupils in the Michigan Schools. And further loss will continue to occur. That is why I plead with you for a consideration and study of *the original plan* of the Michigan State Board of Health in any proposal to change "Sanitary Laws and Administration;" in such case I hope you will study to see if the proposed change will harmonize with the *teaching* of Herbert Spencer's "Knowledge of Most Worth."

THE PERSONNEL OF THE BOARD.

From the beginning to the present time, Michigan has had abundant reason to be proud of the eminent character of the men who, without fee or reward, have philanthropically served the state as members of the State Board of Health. I cannot mention all of them. Among the first members appointed in 1873, was Homer O. Hitchcock, M.D., of Kalamazoo, the first President of the Board. His third annual address as president, published in the Report for 1876 is worthy of study at the present time. Dr. R. C. Kedzie, of the Agricultural College, whose first notable service on the Board was such as to

in great part, stop the terrible deaths by burning by dangerously inflammable kerosene. His "Shadows from the Walls of Death" published by the Board, a copy sent to every "Ladies Library Association" and otherwise distributed, did much to stop the sale of poisonous wall papers for bedrooms; his books, ("Shadows") consisted of samples of papers generally on sale, analysis of which showed dangerous quantities of Paris green loosely attached to the surface. Dr. Kedzie for several years served as President of the Board. Dr. Henry F. Lyster, of Detroit, served on important committees; he did notable service toward lessening sickness from malarial fever. He was one of the first to teach that tuberculosis is a dangerous communicable disease.

Dr. Arthur Hazlewood, of Grand Rapids, was an early useful member of the Board. He is still living, and now a resident of Plainwell.

Dr. John H. Kellogg, of Battle Creek, was an especially able and efficient member of the Board in an early day, and since, especially in examining plans, and advising boards of control of State Institutions relative to the sanitary construction of the buildings for such institutions; also he served on important committees, and in public lectures on sanitary topics, for seventeen years from 1878, and he is now an active member of the Board.

Dr. Victor C. Vaughan has been a member of the State Board of Health since January, 1883. He is now its President. One of his early contributions was his successful analyses of poisonous cheese and poisonous ice cream, isolating the poison, and pointing out how it was formed and methods for its prevention, which for many years have been successful. His contributions to the sanitary sciences have been extensive and important and are so recognized around the world.

SICKNESS STATISTICS.

Complying with its organic law, the Michigan Board in 1876 established a system of sickness statistics, which were soon so reliable as to demonstrate not only which diseases *caused most sickness*, but also in just what month in the year they were most prevalent, and the relative prevalence of each disease in each month. Previously, the Michigan Board had organized what was probably the first State Weather Bureau, consisting of meteorological observers in selected localities throughout the state, who reported monthly to the State Board the results of their daily observations of meteorological conditions likely to have relation to health. Thus, the State Board tabulated the sickness statistics, and the meteorological data; and was able to picture diagramatically for each and every month, the relation of the sickness from each of the important diseases to each of the important meteorological conditions. If time permitted, it might interest you to see with what wonderful exactness such important diseases as pneumonia, influenza and diarrheal diseases, followed the atmospheric temperature, the first named following the low temperature, the latter the high temperature.

Before the Michigan Board began its sickness statistics, the Massachusetts Board had, for one year, collected similar statistics which proved the value of such work; but the executive officer of that Board was displaced by another and the statistics discontinued; so that thereafter the Michigan sickness statistics were unique, no other in the world for any such area as a state were in existence. They were in 1905 promptly discontinued by the first executive officer of the Board *appointed politically*, by Governor Warner.

The sickness statistics had soon revealed the fact that the disease which caused very much more sickness than any other in Michigan was intermittent fever; commonly called ague. Accordingly, all of the knowledge of its causation then available for its prevention was used by the Michigan Board. And it is yet remarkable to what extent the meagre knowledge of that early period was effective toward its prevention. It was called a "malarial" disease; and the *"mal"* or *bad* character of the aerial cause now known to be a species of mosquito, was then only known to be associated with the air from stagnant water in ponds and "catholes." With that knowledge, much was done for the restriction of the disease. Members of the Michigan Board wrote papers and delivered addresses recommending the drainage of swamps and regions of stagnant water. State laws then as now required that taxation for all public drains must be based on the fact of the benefit to the *public health*. The advent of mosquito netting, and especially of the wire netting did very much to reduce the disease.

My recollection extends back to a time, 1849, when in Ingham county not many miles from the State Capital, so many in one vicinity were sick with "Chills and Fever" there were not well people enough to properly care for the sick. Even when the Michigan Board began its sickness statistics in 1876, that disease caused much more sickness than did any other; but by the time those statistics were discontinued, 1905, it was one of the diseases of least consequence. Although probably the greater part of the decrease of the disease, after the general use of screens, was due to that custom, much had previously been accomplished by such measures as had been recommended by the Michigan Board of Health and its individual members.

For *teaching the communicability of diseases*, it was important to have such *proof* of the communicability of each disease as would carry conviction to any intelligent person; also to have proof that the measures advocated by the State Board would actually cause the restriction of the disease for which those measures were recommended. Accordingly a plan was devised whereby facts reported by local health officers were compiled in ways to learn the *average number of cases* of scarlet fever, of diph-

theria, or of other diseases believed to be communicable, in instances ("outbreaks" they were called) where *nothing was done* for the restriction of the disease. Such *average number* of cases where nothing was done, was compared with the average number of cases in outbreaks of the same disease where "isolation and disinfection" were "enforced" by the local health officer as advocated by the Michigan Board. Manifestly, if *less* cases occurred in outbreaks in which isolation and disinfection were enforced, it was proof that the disease was communicable; also that the *measures* advocated by the State Board, and enforced by the local health officer, were effective for the restriction of that disease. Of course, for *that* study, it was essential to have exact definitions of what was considered to be an "outbreak." But the details of that are not necessary at this time.

The entire time of this "early history" might have been taken up with the battles for existence which the Board encountered as soon as it began its work, and which raged most violently during every session of the legislature. It was analogous to the various dangerous diseases which children go through, ranging from the early "snuffles," to whooping-cough measles, scarlet fever, influenza, pneumonia, and tubercular meningitis. Year after year the existence of the Board was threatened, and each new attack was vigorously met, explained, and combatted. As a *parent*, though sorely tried by the diseases of the child, yet always enjoys every recovery, so the anxieties for the safety of the Board were recompensed by its many victories.

Some of this "Early History" had to do with conditions existing then, but not likely to recur; therefore it has only historical interest. Some of it relates to work believed to be of great value, but which perhaps it is not possible to resume. What seems to me to be of the greatest promise for future usefulness, because applicable to conditions now present, and to conditions which shall arise hereafter, is the "Educational System of Public Health Service" which in 1870 was engrafted into the top of the tree hygiene, and thrived, and has to some extent spread throughout the civilized world.

Begging pardon for personal reminiscences, it is a source of very great pleasure to me that I was permitted to study Herbert Spencer's "Education," to have had training in army hygiene, to have felt such a desire to do public-health work as to labor three years toward that end, to have been actively associated with the noble men who constituted the State Board of Health, finally to have been privileged to labor for nearly thirty-three years at work which so nearly realized my ideals, and which seemed to be useful to humanity.

FOREIGN BODY IN ESOPHAGUS IN AN INFANT FIFTEEN WEEKS OLD, SUCCESSFULLY REMOVED BY GASTROSTOMY.

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A very interesting case was referred to me a few weeks ago with the following history:

Infant fifteen weeks old, weight fourteen pounds, while the mother was dressing it about 7 o'clock one morning, a safety pin accidently dropped into the infant's mouth and was swallowed. The family physician was immediately called and after getting the above history, ordered the infant removed to the hospital where an X-ray could be obtained; the pin was found to be open and lodged about one inch above the stomach in the esophagus. The baby was taking its feedings normally and only vomited once. All attempts to force the pin further down seemed to be futile as the patient was too young to swallow solid food. The pin was watched until about 2 p. m. and was still in the same position, the point pointed to the left and upwards and the last skiagram taken showed a marked increase in the heart shadow. It was feared that the pin had pierced the esophagus causing this increase in the heart shadow. It seemed that the only possible hope was surgical interference, this was advised for three reasons: First, it appeared to us that as long as the pin had remained in the same position for six hours, the chance for it becoming dislodged was improbable. Second, the increase in the heart shadow pointed to a possibility of beginning to cause trouble by perforation. Third, notwithstanding the above complications it appeared to us that if the pin should drop into the stomach, being open, our trouble would then begin, and the risk of finding it in the intestines, especially after, perhaps, a beginning peritonitis, especially in so young a subject, would increase the hazard.

Operation.—Under ether anesthesia the stomach was exposed by the usual incision and brought into the wound, it was opened with an incision in the anterior wall about one-half inch long, and a small curved alligator forcep was now introduced through the stomach into the esophagus and after several attempts the pin was seized and recovered.

The stomach was closed with two rows of sutures and the external wound closed in the usual manner. The patient was extremely shocked but reacted nicely.

Saline (Murphy Drop) Postoperative Course was given per rectum for twelve hours after which small doses of water were given by mouth alternating with mother's milk; the patient returned to the breast the third day at which time it left the hospital making an uneventful convalescence.

The pin measured two and one-half centimeters in length, and one and one-half centimeters at its widest point.

TRANSACTIONS

OF THE

Clinical Society of the University of Michigan

Stated Meeting, May 3, 1916

The President, UDO J. WILE, M.D., in the Chair
Reported by REUBEN PETERSON, M.D., Secretary

ANOMALIES OF THE FIFTH LUMBAR IN RELATION TO BACKACHES.

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The interest and timeliness of a medical subject depends on a number of factors. A condition may be so frequently seen and in so various a form that it is always timely. Or it may gain interest from recent advances in our knowledge of the disease, or from its rarity, or its obscurity, or from an unusual number of cases seen in a given time.

The subject we have chosen falls under the last two heads. The study of the fifth lumbar, its variations and their relation to pain in the back, is as old or older than orthopedics. In the course of our work, we have from time to time recognized occasional examples with a mild degree of interest, but, during the month of March, the number of cases coming from several different clinics, engaged our attention from sheer force of numbers, and our subject thereby becomes doubly "timely."

The fifth lumbar vertebra is notoriously a variable structure. It has long been known that no two fifth lumbars are exactly alike, but the anatomist has been content to limit his studies to the gross variations such as failure of closure of the posterior arch, or inclusion in the sacrum. As an anatomic study, the appearance of the fifth lumbar in the radiogram has been described by Lufhoff (*Fortsc. Geb. Roentg. Strahl.* IX and XI) and by Scheede (Idem XVII, 355). It is here brought out that this vertebra is peculiar in that the lateral border of its body are rarely distinctly projected, and that the lower margin is almost never shown on the plate, whereas these are striking features of all the other vertebrae. The explanation is found in the fact that, in distinction from all others, the anterior surface of this centrum gradually merges into the lateral pedicles without anywhere approaching a plane parallel to the X-ray, while in the normal curvature of the spine, its lower surface is so far inclined from the path of the ray that it virtually overlaps the upper border of the sacral body. In addition to this, the body of the fifth is more cancellous than that of any other vertebra and casts a lighter shadow.

The variability in the size, in the position with reference to the level of the iliac crests, its inclination to the vertical axis, and in the planes of the posterior articulations are matters of common knowledge.

Some of these variations, we have learned are associated with definite pathology, and so have come to be classed with the pathogenic factors of several conditions. For instance, we have come to regard with suspicion the fifth lumbar whose body does not rise above the level of the iliac crests. The position of the lower border of the centrum is less well known because less frequently seen on the plate. The inclination of the axis of the centrum to the vertical axis of the body is found to be not merely a matter of lordosis, at least it can not be reduced by flattening out the back against a hard table. It would seem as though the normal lordotic curve in this region had its point of maximum curvature at a point higher than normal, virtually including the last lumbar with the sacral portion of the spine.

Associated with these abnormalities are fairly characteristic changes in the form and size of the lateral processes. They are often markedly increased both in length and in width, frequently being flattened out into broad bilobed structures tipping in a plane upwards and backwards.

When well developed, they justify the name that has been applied to them, viz., "butterfly transverse processes."

Not infrequently these processes are truncated, flattened off, and otherwise shaped to conform to the shape of the adjacent lateral bodies of the sacrum or the iliacs, and occasionally the extremities are definitely facetted on both the contiguous surfaces to form an imperfect articulation. Such articulations are more frequently with the lateral bodies of the sacrum than with the ilium. Sometimes there seems to be a bony union between the opposed surfaces.

The posterior arches may show associated changes. Most frequently they appear much narrower than normal, as though compressed from above downward, the spinous processes may be much abbreviated and deflected from the vertical, so that the spines of the lower lumbars may be "staggered" like the shingles of a roof.

The plane of the posterior articulations normally is not in the sagittal plane of the body as are the rest of the articulations, but are directed outwards as well as backwards. This outward rotation is often much exaggerated, so that these articulations are not at all well seen on the plate. The height of the process is also reduced.

Where the complaints are of comparatively long standing, we often see inflammatory changes in the nature of calcified exudates. The earliest manifestations are a certain haziness about the posterior articulations, if these can be seen at all. Not infrequently the articulations between the last lumbar and the sacrum are obscure from the unusual obliquity of the articular plane; an early change can not be made out here, but appears one segment higher. In addition we may find a slight density along the course of the great iliolumbar ligament, or along the lumbosacral ligament, or slight erosions of the bones at the point of contact, and, finally, we may find the lipping of the margins of the centra characteristic of "hypertrophic arthritis."

These abnormalities in various combinations and in various degrees are commonly spoken of as a "Sacralization of the Fifth Lumbar."

The fundamental conception of this term is that of an upward shifting of the pelvic girdle on the spinal axis. If this shift represents the whole of one segment, we find only four lumbar vertebrae, an abnormality that has occasionally been noted. An analogous downward shift produces an extra lumbar, i. e., a total of six lumbar vertebrae, a condition that is much more frequent, especially in the Esquimos and certain primitive tribes in Africa. Usually the shift is upward and amounts to only a fraction of a segment and the result is the condition here described.

A similar upward shifting of the thoracic cage in relation to the spinal column is supposed to occur independently or with this condition. It gives rise to the formation of cervical ribs and less frequently to hypoplasia or even aplasia of the twelfth ribs. There is a general impression that cervical ribs and sacralization are frequently associated although I know of no statistics on this point.

The center of curvature of the "lordotic lumbosacral" curve of the spine lies about on a level with the fifth lumbar vertebral body. This curve is at once the sharpest and the most recently acquired of the spinal curves, is found only in man, and is directly related to his erect posture. It, therefore, depends directly on the position and insertion of the pelvic girdle. With the upward shifting of the latter, there is, of necessity, a similar upward shifting of the center of curvature, so that it comes to lie as high as the fourth lumbar body. This curvature is mainly produced by the wedge shape of the fifth body and the succeeding fibrocartilage. When it lies higher than normal, the excess in the length of the longer arc must be taken up at a higher level, and, in fact, we find the preceding fibrocartilage more wedge shaped while the succeeding one has become more nearly rectangular in cross section.

Normally the weight of the body is transmitted fairly directly to the sacral body, but with the upward shifting of the center of curvature, it comes to fall more nearly on the abnormally obliquely placed last lumbar, and the latter is forced to assume functions that are purely sacral. And, whereas the sacrum is adapted to this work by the firm fusion of its centra, lateral bodies, and posterior arches, the last lumbar is left suspended by its strong but inadequate ligaments between the abnormally high iliac crests.

The influences working on this vertebra are precisely those that originally produced the fusion of the sacral segments far down the phylogenetic tree, and their influence is directed in the same direction, viz., towards the expansion of the lateral processes, their fusion with the lateral bodies of the sacrum, the shortening and strengthening of the posterior processes and by their anchylosis their final incorporation into the posterior arches of that structure. This is the basis of the commonly used term "Sacralization of the Fifth Lumbar Vertebra."

The detailed discussion of the altered mechanical relationships, the redistribution of the various stresses and strains, would carry us too far afield. One can easily see that the chances of mechanical injury and the liabilitity of infectious and noxious influences in these structures are greatly increased thereby.

The material from which this selection of lantern-slides is taken comes from several clinics. The majority were referred from the Department of Orthopedics with the complaint of "backache," "lumbago," pain in the back radiating upwards into the flank and down into the thigh. Certain postures and certain movements aggravate the pain. Postures and attitudes are prominent features in the usual history. Pareses and altered reflexes are not uncommon as secondary manifestations.

Next in frequency are the cases referred from the Department of Genito-urinary Surgery. Here the finding was an incidental one. In the search for renal and ureteral calculi, the lumbosacral articulation is always included in the field examined, and is always inspected as a matter of routine. A number of these cases have shown one or more of these anomalous features. A history of pain radiating into the testicle appears to be common to these two conditions.

Two cases had been treated for long periods (elsewhere) for "sciatica." One case was suspected of concealing an intractible appendix, and one a Neisserian spondylitis. In several cases Pott's disease was suspected. One case (a girl of 22) had survived four laparotomies, gynecologic and otherwise, in a vain search for the cause of her pain.

From this it appears that the symptoms associated with these anomalies vary in location and in degree, and through a fairly wide range. Unfortunately, we are not in a position to define the exact relationship between the symptoms and the deformity of the spine. It must be confessed that not every case with a lumbar fifth like this description, complains of symptoms, nor does every case of backache showing these findings justify the conclusion that they are etiologically related. Several of the latter have had surgical kidneys. One of them did have a gonorrheal spondylitis. One of them did have a pathologic appendix. Nevertheless, a certain number had no other excuse for their backaches, and others had definite inflammatory changes which certainly incriminate the anomalous fifth lumbar as in some way related to the cause of the pain. Moreover, the frequency of this finding is much higher in those complaining of pain than in the normals, and the gravity of the complaints bear some relation to the degree of the deformity.

A direct etiologic relationship between these two conditions can not be predicated on the facts at hand. In the present state of our knowledge, the roentgenologist is not in the position to state dogmatically, "this patient's backache is due to a sacralized fifth lumbar," but this conclusion seems to be justified with a degree of probability increasing with the degree of the deformity. Our present position is rather that the anatomic conditions, the anomaly, shown by the radiogram are evidences of a predisposition to traumatic, toxic, and infectious processes, by reason of the imperfect adaptation of the structures involved to their function.

The inflammatory changes we consider mainly secondary. Indeed, it is not improbable that the ordinary lesion is always mechanical, slight strain, microscopic injuries to the capsular and ligamentous structures, with consecutive edema, exudate, cicatrix and calcification. These condition provide an excellent soil for the development of infectious and toxic phenomena, which, in turn, predispose to trauma, and the vicious circle is completed.

A rational anatomic explanation of the direction of the referred pains is not possible. To be sure, the sacral plexus lies in almost immediate contact with the anterior surface of the pelvic bones and may very conceivably be involved in the exudate. The posterior spinal branches are even more closely associated with the site of the injury. On the other hand, the genitocrural is separated by a considerable thickness of the psoas muscle after having escaped from the spinal canal several segments above the site of the pathology and the latter can scarcely be accused of causing the testicular pain by direct involvement of this nerve. The upward radiation of the backache is another proof. We are forced to the conclusion that many of these phenomena are referred and not due to involvement of special nerves.

As to the treatment, that is a problem for the orthopedic surgeon. Rationally, one would advise rest until the inflammatory reaction has subsided, mechanical supports, correction of faulty postures, avoidances of strain on the articulation, removal of tonsils and other septic foci, and general hygiene.

Transversectomy has been done in a limited number of cases with indifferent results. The area is very inaccessable, and some very curious pareses have been noted. If our conception of the pathogenesis is correct, we should scarcely

feel justified in knocking the props out from under a structure that is already suffering from mechanical weakness. However, the problem resolves itself into the question whether the situation can best be improved by mobilization or by fixation of the parts. The natural tendency seems to be in the latter direction.

DISCUSSION.

Dr. Harry Malejan: I would like to ask Dr. Van Zwaluwenburg how he would explain some of the conditions of the bladder in these cases. We have had some cases with symptoms of cystitis and pus in the urine. In these cases there was no stone either in the kidney, ureter or bladder and no history of gonorrhea, in fact no exciting cause for cystitis. X-ray report, however, comes back as sacralization of the fifth lumbar.

Dr. Conrad Georg, Jr.: I happen to have one of these cases under treatment, a cement mixer.. He is a young man of 35, well built, has been a laborer all his life and has been a cement mixer for many years. About two years ago he had a septic infection of the hand and forearm and came to the University Hospital and was operated upon several times. He was here several months for treatment and came near dying. He had several incisions in the hand and some of the fingers were amputated. There was contraction of the scar tissue which resulted in a flexion deformity of some of the fingers. Last fall he began to complain of backache. At times the pain became so severe that he had to go to bed. When these attacks came on he was unable to lie on his back or sides on account of severe pain in the sacroiliac region. When I saw him he was lying on his stomach. I first thought of a local arthritis and then thought it might be rheumatic with some tendency to sciatica. Pressure over the left sacroiliac region caused severe pain. After a few days of rest in bed and medical treatment with salicylates he recovered sufficiently to go to work again.. The condition always relapses within a short time and he has been confined to his bed most of the time this winter. Finally in order to clear up the diagnosis I sent him to Dr. Van Zwaluwenburg and I have seen from the illustration that it is a very marked condition of sacralization of the fifth lumbar. There seems to be considerable increase of the transverse process of the fifth lumbar and the spine seems to be curved toward the affected side.. Since discovering the real condition of affairs I have advised this man to change his occupation and he is working now in a factory where he does not come in contact with moisture.

Dr. Charles L. Washburne: I would not want to say that these cases are all pathologic. There are as many variations of the fifth lumbar as there are fifth lumbars. If you could take an X-ray of the people in this amphitheatre, the chances are that some of them would show abnormalities and inflammatory changes in the region of the fifth lumbar vertebrae. The development of this condition depends largely upon the work which the patient does. There is a definite line of symptoms from which this condition may be diagnosed without the X-ray. It is not a new condition, but one that has not been well described in the text books in the past. It has been variously called sciatica, sciatic neuritis, rheumatism, etc,. and has been a source of profit to chiropractors and fakers all over the country.

There is an obliteration of the lumbar lordosis and as the patient bends forward, if the condition is on one side alone as it usually is, his anterior bend will deviate from the affected side. If it is on the right side, his body will lean toward the left. There is usually tenderness over the upper portion of the sciatic nerve. The patient sleeps poorly, has lost considerable flesh and the condition has extended over a period of months or years. He lacks the characteristic symptoms of tuberculosis. There is no destructive process of the bodies of the vertebrae.

Dr. Malejan asked about the relation of this to infection. There is no question but what a person can have a sacralized lumbar vertebra without any symptoms from it. If you associate this with gonorrhea or old chronic tonsillitis, you are almost certain to have pain and disability. Occupation has something to do with it. Book-keepers, writers, blacksmiths, engineers, plumbers, firemen and men working in factories have the symptoms most often.

The question of treatment has not been solved. Application of jackets and changes in occupation will relieve or cure most cases. Operation is attended with great danger to life. The depth of the wound is three to five inches, associated with this the lumbar cord of the lumbosacral plexus runs almost immediately in contact with the transverse process of the fifth lumbar and any operation on this bone will disturb the nerve supply to the leg. Fully 50 per cent. of the cases reported as operated for this condition have shown paralytic deformity after the operation. As yet we have not operated any of these patients.. If we find one sufficiently serious to demand operation and the patient, after being told of the possibilities of the operation, still insists upon having it done, we will operate.

Dr. Van Zwaluwenburg: I am greatly flattered by the number of questions that have been asked, and only regret that lack of time prevents me from answering them seriatim and at length. I fear I have been somewhat misunderstood on several points. I think that I distinctly stated that a direct etiologic relationship between this lesion and the symptoms of which the patients complained could not always be established. It is, of course, perfectly irrational to suppose that an anomaly of the kind described should produce pus in the urine; these two findings must be assumed to be simply coincident.

What I have tried to emphasize is that we have here an anatomic basis for the greater frequency of trouble in this region in the unfortunate possessor of a sacralized fifth lumbar than in the normal individual. I have further attempted to show that in these cases of otherwise unexplained backaches, secondary reactions of an inflammatory nature are produced, and that in their presence, the chances of complete recovery are much worse than otherwise.

As to the literature; there is very little of it, although it has attracted a great deal of attention. The general attitude of the students of this subject is pretty well illustrated by that of a prominent orthopedist whom I met not long ago. He confessed that he already had four manuscript articles on the subject unpublished, and he was uncertain

whether they would ever be published. He, also, has come to the conclusion that the condition is important mainly because it presents a point of lessened resistance to infections, intoxications, and trauma.

REPORT OF A CASE RESEMBLING SPRUE AND REMARKS ON AMEBIASIS.

Harry B. Schmidt, M.D.
(From the Clinic of Internal Medicine, University Hospital, Ann Arbor, Michigan).

I have been asked by Dr. Hewlett to demonstrate amebae from a patient who has amebic dysentery in the Medical Clinic at the present time. After several doses of emetine the amebae are not to be found. I have scraped the patient's intestinal mucosa as far as I could reach with the protoscope, and have examined his stools and I cannot find any amebae, so it will be impossible for me to demonstrate them; but I can tell you something about the case, first calling your attention to another patient whom we had in the Clinic in the summer of 1914.

This patient entered the Hospital complainimg of pain in the epigastrium, general weakness and sore mouth. He was 41 years of age, married, and a farmer by occupation. His family and personal history were unimportant. The present illness began six years before with distress in the epigastrium and belching after eating. In February, 1914 he began to have five or six stools a day unaccompanied by pain, tenesmus or blood. During February and March he vomited considerably and complained of great distress in the bowels. There was no blood in the vomitus. Since February he has lost thirty-five pounds and since that time his mouth had been sore.

The patient was extremely emaciated, and all the bony landmarks were prominent. No pigmentation of the skin or mucous membranes was noted. The mucous surfaces of the mouth were covered with white curd-like masses resembling thrush, and there were evidences of superficial erosion. The same was noted in the rectum and as high in the sigmoid as could be seen. There was nothing notable in the urine. The red blood cells were 2,300,000; hemoglobin 43 per cent. The examination of the stomach contents was negative. The systolic blood pressure was 85. The Wassermann was negative.

The stools were interesting, very large in amount from five to six a day, usually two or three in the morning, clay colored, very frothy and unformed. There were microscopic fat droplets in excess. The guiac test was occasionally positive. The temperature ranged from 99 to 101° up to the time of his death which occurred after he had been in the Hospital twenty-one days. He was placed on a strict milk diet and given Blaud's pills with bismuth. Under this treatment he continued to lose weight and died of exhaustion. No autopsy was granted.

The interesting features of this case were the emaciation, peculiar stools and the thrush-like condition of his mouth and rectum. Dr. Wile examined the patient and pronounced the mouth condition a stomatitis. This triad of symptoms, extreme emaciation, secondary anemic ulceration of the mucous membranes of the mouth and rectum, and the peculiar stools, resemble the symptoms described in sprue. The patient had never been outside of the State of Michigan; therefore, if this was a case of sprue, it must have been sporadic, as he had never been associated with anybody having the symptoms of sprue.

Sprue has been reported in the United States. It was reported in the *Journal of Medical Sciences* in November, 1915 by Woods. Graham in 1905 reported four cases from the State of Georgia. Four cases were noted by Harris in 1907. One case was reported by Searcy in Alabama as a case of pellagra without skin symptoms. In 1902 Wood called attention to the diagnosis of sprue and pellagra observing that a great many cases of pellagra without skin symptoms were probably sprue. At the American Medical Association meeting in 1915 Heath and Allen reported a number of cases of sprue, one in North Carolina. Those who have written on sprue claim that it cannot be confused with any other disease. The symptoms are recurrent attacks of severe diarrhea, as many as thirty stools occurring a day, always frothy and yeast-like. There is a secondary anemia with stomatitis of the mouth and rectum and extreme emaciation. At autopsy the ulcerations are seen to extend throughout the gastro-intestinal tract.

The present patient with amebic dysentery came from Russia in 1905. He contracted his disease in the Russo-Japanese war, a very acute dysentery, at that time, which disappeared in six weeks. From time to time he has had recurrent attacks. In the past year it has become much worse and he has had ten to fifteen stools a day, which frequently contained blood and mucus. On examination of the stools numbers of very large motile amebae, many containing red blood cells, were found. I showed these amebae to Dr. LaRue who has been experimenting on non-pathogenic types in the

Department of Zoology. He said he had never seen as many amebae in a preparation as there were in these stools, there being from sixty to eighty in a field, associated with many trichomonads.

In this Clinic in the past five years there have been six cases of amebic dysentery, amebae being demonstrated in all cases. One was a case of lung abscess which had perforated. I have never seen a case with the exception of the case of lung abscess unassociated with trichomonads. There were three cases of trichomonad dysentery reported in this Clinic several years ago. Two of these cases have since proven to be amebic dysentery.

In one of our cases the man had dysentery over thirteen years. He had many trichomonads and we searched three days before we found one ameba, although I am not sure that it was a pathogenic form. Ementine completely cured this man. That was four years ago and I have seen the patient on several occasions, and he has never had any trouble since.

Any case of dysentery with trichomonads should be treated with emetine, it makes no difference whether the amebae are found or not. In a case of dysentery with amebae it is a matter of indifference whether they are pathogenic or not, the patient should be treated for amebic dysentery.

The results of the emetine treatment reported throughout the United States have been very encouraging. In the cases that we have treated we have had good results in all but two. One case was treated here for six weeks with very little improvement. He went home and has not returned. The other patient died and was autopsied.

It is interesting that Levy and Browntree of Johns Hopkins Hospital have reported two deaths and one patient with severe toxic symptoms with recovery following the use of emetine in doses which were rather large, about three or four grains a day. They examined preparations of emetine bought on the market at random and found that many dogs under moderate doses would develop severe diarrhea and finally succumb. Two of their patients died, one probably of uremia although he had been given emetine and showed some symptoms resembling emetine intoxication. The other was a woman who had a severe gastroenteritis but she finally recovered. Our patient had a very severe secondary anemia. He died probably of bronchopneumonia and acute dilitation of the heart. There was nothing in the gastrointestinal tract to suggest emetine intoxication. The large intestine showed amebic ulcerations and thickening.

DISCUSSION.

DR. QUINTON O. GILBERT: The case reported by Dr. Schmidt is very interesting because the amebae were so large, and fulfilled every requirement for entamoeba histolytica, i. e., large size, rapid motility, differentiation of ectosarc, inclusion of erythrocytes and indistinct form of the nucleus. In the pathogenic forms, when motile, the nucleus is very indistinct and only as the organisms become quiescent can one definitely make out the pale chromatin bodies in the ring shaped nucleus. These were distinctly seen in this case.

Two years ago I had a patient at St. Joseph's Retreat who had amebic dysentery and the large pathogenic amebae were found as in this patient. It was a psychiatric patient, who had had a more or less persistent diarrhea for nine years, was a resident of Northern Ohio and had never been farther south than West Virginia.

Although we have had other cases of amebic dysentery in our Clinic, none of them showed the truly characteristic amebae except the patient reported by Dr. Schmidt at this time. In my patient the trichomonas intestinalis were present also in great numbers. This patient received three doses of neosalvarsan intravenously, which caused the amebae to disappear from the stools.

DR. UDO J. WILE: It may be interesting to call attention to the fact that emetine enjoys some reputation as an efficient drug in the cure of pyorrhea. In this connection I know of one report by Dr. Engman of St. Louis in which a case of pyorrhea is described with amebae found in the gum and the case went on to very complete cure under the emetine treatment.

DR. VICTOR C. VAUGHAN: I know nothing especially about amebic dysentery. I enjoyed Dr. Schmidt's paper very much. I believe that amebic dysentery is pretty widely distributed over the world. It was reported almost simultaneously along about 1878 by Lösh in St. Petersburg and by Kartulis in Cairo, Egypt.

DR. JAMES G. VAN ZWALUWENBURG: I would like to call attention to a case in this Hospital some years ago, in which the diagnosis of "sprue" was seriously entertained and my minority report has always been of that import. The patient was a missionary returning from China, the diagnosis of sprue had already been made in another hospital, and she afterwards died in still a third hospital as a case of sprue. However, this case is not listed here under that diagnosis.

In connection with the cases of amebiasis reported tonight, allow me to emphasize the fact that not all cases are imported. During my connection with the Clinic we had at least two cases that were strictly indigenous, both coming from Detroit.

A CASE OF ATONIC SENILE ECTROPION TREATED BY PLASTIC OPERATION.

GEORGE SLOCUM, M.D.
(From the Ophthalmologic Clinic, University Hospital, Ann Arbor, Michigan).

The case we have to bring before the Clinical Society is a long standing, senile ectropion of the flaccid type dating back some twelve or fourteen years. The patient comes to the Hospital for the removal of a senile cataract but its removal must be postponed until the lid has been restored to its normal position and the hypertrophic conjunctivitis cured.

Ectropion may result from several causes among which may be mentioned chronic hypertrophic conjunctivitis, a relaxed flaccid condition of the lower lid and cicatricial contraction from burns or wounds of the orbicular region. The operation decided upon will depend largely upon the type to which the ectropion belongs. As the flaccid type develops the lid margin drops away from the eyeball, the conjunctiva becomes inflamed from exposure, and the eyes fill with tears because the punctum no longer approximates the lacus lachrymalis. Long continued exposure results in marked hypertrophic changes and the lid turns more and more outward. Because of the nature of the etiology, palliative treatment is most unsatisfactory in this class of cases, although after operation it is usually necessary to use alum stick or some other astringent to stimulate absorption of the hypertrophic inflammatory products.

For cases with but little relaxation the simplest operation consists in making a row of cautery punctures parallel to and a short distance from the lid border; in the hypertrophic conjunctiva using for the purpose a pointed galvano cautery after the method advised by Ziegler. For the more pronounced cases a more radical procedure gives better results. The operation performed by Dr. Parker in this case was the Szymanowski-Kuhnt operation, also called the Dieffenbach-Kuhnt operation, though it would seem necessary if full credit is to be given that the name of Mueller should be added to the names of these three surgeons: Dieffenbach-Szymanowski-Kuhnt-Mueller operation.

The operation devised by Dieffenbach consisted in removing a triangular piece of skin from the neighborhood of the outer canthus. A cut was made horizontally outward long enough to equal the relaxation of the lower lid; a second cut was made from the external canthus straight downward and of about equal length; the distal ends of these incisions were then united and the included triangular piece of skin was removed. The skin of the outer half of the eyelid was next undermined and the lid severed from its attachment to the external canthal ligament; the lid was now sutured to the outer skin margin of the denuded triangle.

Szymanowski modified this procedure by making the first incision from the outer canthus up and out instead of directly out. The other steps were much the same. The improvement consists in a better elevation of the outer canthus.

Kuhnt's operation consisted in splitting the lid near its center from the intermarginal line deeply into the tarsus with a keratome. A triangular piece of conjunctiva and tarsus was then removed and the tarso-mucous margins brought together with sutures. This procedure leaves a rather unpleasant wrinkling of the loose skin to obviate which Mueller split the whole outer portion of the lid and distributed the loose skin above the lid border by properly placed sutures. The operation was finally perfected by taking out the tarso mucous wedge shaped piece as done by Kuhnt, splitting the lids as done by Mueller, and finally removing the triangular skin area from the area external to the canthus according to the Szymanowski-Dieffenbach procedure. This operation shortens both the tarso-mucous and the musculo-cutaneous layers without danger of notching the lid border, takes up the laxity of skin, supports the outer canthus, and approximates the punctum to the lacus, meeting all the requirements in a very satisfactory manner. It is obvious that caution should be used not to remove too large a piece of the tarso-mucous layer nor of the skin at the outer canthus. If on trial, too small a piece has been excised a larger piece can be removed before the sutures are placed. The central sutures are tied on the conjunctival surface. The split surfaces of the lid are held in apposition by a through and through suture near to, but not crossing the lid border and tied on the skin surface over a bead or roll of rubber protective. Two or three skin sutures usually serve at the outer margins of the denuded area.

The photograph taken before the operation does not show the extent of the deformity corrected, for the patient unfortunately looked down instead of straight ahead as he should have done when the picture was taken.

RESULTS AFTER PROSTATECTOMY.

Ira D. Loree, M.D.
AND
R. W. Kraft, M.D.
(From the Genito Urinary Clinic, University Hospital, Ann Arbor, Michigan).

During the fiscal school year of 1914-15 there were forty patients with senile hypertrophy of the prostate enrolled in the Genito Urinary Service. These patients were referred by the practitioners of the several states which contribute patients to the University Hospital. Because of the crowded condition of the Hospital fourteen of this number could not obtain beds. Two-thirds of these patients were farmers with limited means, and did not accept their physician's advice to seek surgical relief until their condition had, in most instances, become critical. Of the remaining twenty-six patients but one was refused operation. He had an enormously distended bladder when first examined. The functional kidney test (phenol-sulphonephthalein) for two hour sample of urine being too low for a reading, the routine procedure in such cases of estimating the urea content of the blood was carried out and found to be 3.50. This patient died in a uremic convulsion five days after admission. Extreme distention with its resulting serious kidney involvement is commonly encountered in this Clinic.

Out of the twenty-five patients who were operated upon, one died of pneumonia. The remaining twenty-four not only recovered from the operation but were satisfied with the results. The nearest approach to a permanent fistula occured in a patient who left the Hospital against advice. He returned five months later with tenesmus and inability to pass much urine per urethram. We removed a flat, oblong piece of organized tissue, probably a slough, which had occluded the orifice. Following its removal, the suprapubic opening quickly healed.

Two patients had been previously operated upon for removal of the gland by the perineal route. One of these, operated ten years before, had had a suprapubic incision made for drainage one year later. He had passed all his urine through this opening for nine years. The perineal operation upon the second man had been performed six years before without beneficial results. There were good-sized masses of prostatic tissue removed from each patient.

The material is of interest, not alone from the standpoint of the advanced ages of the patients, but because of the long time the disease had been allowed to run and the resulting complications. The average age of the patients was sixty-five years, the extremes being eighty and fifty-three years. Two-thirds of them were farmers. The average duration of the present trouble was six years. The extreme duration was thirty years, occurring in the oldest patient of the series, who made an uninterrupted recovery in thirty days.

The average length of time the patients remained in the Hospital after prostatectomy was thirty-one days. The shortest was sixteen days and the longest fifty-four days.

Through the courtesy of the Department of Internal Medicine, to which many of these patients are referred for expert physical findings, we are indebted for the following diagnoses in some of these patients:

Arteriosclerosis with senility.

Chronic interstitial nephritis with cardiac hypertrophy.

Persistent irregular pulse with pulmonary tuberculosis.

Hemiplegia with brain softening.

One interesting case referred to this service from the Psychopathic Hospital with a diagnosis of senile dementia, epilepsy and hemiplegia, was successfully operated upon and returned to that service. The medical findings were myocarditis, nephritis and emphysema with irregular pulse. The patient was cyanotic, dyspneic and weighed two hundred and twenty pounds.

A positive history of gonorrhea was obtained only in one case. A positive history of some hematogenous infection was obtained in every case. Merely suggestive is the fact that three-fourths of the patients gave a history of typhoid fever, typhoid malaria, or rheumatic fever. It will be of special interest to determine during the following years the importance of the above observation. Not a single case of carcinoma of the prostate, in another series, gave a history of typhoid. Only five patients used tobacco or intoxicants, both being suggested at one time, as etiologic factors.

We insist upon the history of these patients including, beside the usual symptomatology, the record of a complete physical examination: blood examination; blood pressure and a Wassermann. In parenthesis, it is of interest to know that in patients of advanced age the Wassermann is of little value. It may be negative on the blood of such a patient with an active gummatous lesion of the nose, a definite C. N. S. lues, and positive spinal fluid. Residual urine is carefully recorded unless abdominal palpation indicates overdistention, in which case five to six ounces of urine are allowed to flow out

through an indwelling catheter every hour until the bladder is emptied. We have discontinued the routine use of the permanent catheter unless the time for operation is delayed for a few days after the patient enters the Hospital.

If digital examination per rectum reveals little or no enlargement in a suspected case, cystoscopic examination is made to detect, if possible, the presence of a median lobe or a fibrous ring. When the functional kidney test is below 10 per cent. for two hours, ten cubic centimeters of blood are withdrawn and an estimation is made of its urea content.

The two stage suprapubic prostatectomy is alone employed in this Clinic, the preliminary cystotomy being performed under 2 per cent. novocain anesthesia. After opening the bladder, digital examination of its walls and the prostate is made, after which a good-sized rubber tube drain is inserted and the bladder wall stitched tightly about it. We consider this a much more efficacious method of drainage than a permanent catheter per urethram or one placed by means of the trochar and canula. The urine drains into a bottle placed in a pocket on the patient's abdominal bandage, and he is up and about the day following the operation. The patient's appetite, dry tongue and general condition improve rapidly after the above procedure. However, in but one case was there an increase in the phenol-sulphonephthalein output.

The time for the second operation depends upon the rapidity of improvement. In the majority of the patients of this series it was performed at the end of one week. One patient was kept six weeks before it was deemed advisable to subject him to the strain of the second operation. Under gas-oxygen anesthesia the finger is pushed into the bladder through the old incision and the gland is enucleated. A Hagner bag is then introduced to control hemorrhage, and after its removal, at the end of twenty-four to thirty-six hours, a large-sized soft rubber catheter is inserted into the bladder. After the stitches are removed the wound is held tightly about the catheter with gauze and collodion. The first requisite in the postoperative care is to keep the patient dry. This is made possible in 98 per cent. of cases, by dressing them daily with renewal of the gauze and collodion as they begin to loosen.

DISCUSSION.

Dr. Ira D. Loree: The increase in the number of old men coming to the Hospital for senile hypertrophy of the prostate is probably in ratio with the increase in the other services of the Hospital. About ten years ago when Dr. Ferguson of Chicago, who is now dead, came to Ann Arbor to address one of the local societies, he told me that he had performed eighteen operations for senile hypertrophy with one death. This was at that time quite an enviable record. There had been only two or three prostatectomies performed in Ann Arbor at that time to my knowledge.

One of the objects of Dr. Kraft's paper as you probably well understand is to show you the class of patients we have coming here with this trouble. I don't believe any Clinic in this country has a class of patients with more complications or any poorer risks. Much of the credit of the success of this series is due to Dr. Kraft because he had the after care and that has a great deal to do with getting them well.. His watchword was to keep them dry. We mean here by keeping them dry to keep them dry twenty-four hours of the day. Dr. Kraft's work would be better appreciated if you would go into some of the clinics not only in this country, but abroad, and see how these poor patients wallow in urine soaked dressings and bed clothing. As Dr. Kraft has well said, we kept 98 per cent. of them dry all the time.

Dr. Harry Malejan: I would like to say a few words about the double stage operation. About three or four days after performing the first stage of the operation under local anesthesia the patient, as a rule, shows beginning symptoms of uremia. The urinary output diminishes to 500-700 cubic centimeters. The phthalein content drops to 15-20 per cent. and the urine boils solid with albumin. The tongue of the patient is dry, parched, and the temperature subnormal. The patient has anorexia and is apathetic. The peculiar balance existing in the nervous control of the secretion of urine, kidney and heart is disturbed. This condition lasts four or five days, then there is more copious secretion of urine, the phthalein output is increased, less albumin occurs in the urine, and the patient's general condition improves, and he is ready for the second operation. In our Clinic since I have been here I believe our mortality has decreased due to the double stage operation.

Dr. Harry B. Schmidt: I have seen a number of Dr. Loree's cases referred for medical examination and I should say that a good 50 per cent. are lucky to be alive when they reach the Hospital.. When they tell me they are going to have their prostates removed, I am greatly surprised. It is a wonder to me that half of them recover.

Dr. Rollan Kraft: One of the most interesting things is the etiology which naturally cropped up in going over the histories. Three-fourths of the patients show a hematogenous infection at some time. This has been noted by other observers. These infections were diagnosed rheumatic fever, typhoid fever, malaria, etc., but all of them may have been typhoid. I thought that during the coming year it would be interesting to try Widals on these patients.

Dr. Harry B. Schmidt: Most of these cases have hypertension and show uremia and nephritis.. Do the majority of these cases have true chronic interstitial nephritis or is it an old ascending pyelitis?

Dr. Ira D. Loree: Most of them are secondary conditions from the bladder, I believe.

ALFRED FOURNIER—AN APPRECIATION.

Warren T. Vaughan, M.D.

In the death of Jean Alfred Fournier, who died in Paris in December, 1914, we have lost one of the greatest of modern scientific clinicians. Although a broad man and well versed in the various branches of medicine, he devoted particular attention even from the time of his internship to the study of syphilis in its various phases. His broad clinical experience combined with his remarkable ability to differentiate the various pathologic processes enabled him to recognize an unsuspected syphilis as the etiologic factor in various diseases previously not classed as syphilitic.

In his teachings, Fournier insisted upon the duality of chancre and chancroid. He was the first to assert the etiologic relationship between gonorrhea and rheumatism. He described spontaneous or metastatic gonorrheal conjunctivitis, not resulting from external transportation. He was the first to make the claim that tabes and paresis were of specific origin. In fact he created an entirely new class of syphilids, the "parasyphilids," morbid conditions which are often if not always specific or heredospecific in origin, but which clinically do not appear syphilitic. These conditions have two characteristics, first, that they can occur without any luetic signs whatsoever, and second, they are relatively uninfluenced by mercury and iodine.

Included within this category were pigmentary syphilids, neurasthenia, hysteria, tabes, general paralysis, epilepsy, certain progressive amyotrophies, hereditary dystrophies, hydrocephalus, Little's disease, and leukoplakia buccalis. He also suggested the occasional luetic etiology of diabetes, hemoglobinuria, certain tertiary erythemas, and a variety of alopecia. It is now an established fact that pancreatic syphilis tends to be associated with glycosuria.

It was this directing idea that syphilis was ubiquitous, which led to Fournier's numerous surprising discoveries.

From the beginning of his career he had the habit in his extensive private practice, of jotting down a note at each visit of each one of his patients. He thus accumulated a veritable pathologic museum. Concerning this he has said, "I have made myself a collector in syphilis just as fancy or curiosity invite others to become collectors of pictures, of books, of trinkets, of autographs, of snuff boxes. It is thanks to these notes that I have been able to first convince myself, and then convince my colleagues of the pathogenic relationship between syphilis, general paralysis, leukoplakia, and the heredospecific dystrophies.

Perhaps his greatest title to renown lies in his theories concerning hereditary syphilis. In his "Latent Hereditary Syphilis" published in 1886, he described with precision the stigmata of heredosyphilis, the cranial bosses, saddle back nose, sabre shin, and the typical alterations in permanent teeth. He also suggested the possibility of heredosyphilis affecting the second generation, a view which today is receiving much study.

A most important contribution was Fournier's "Syphilis Secondaire Tardive," in which he demonstrated that luetic subjects in the tertiary stage might, contrary to the rule, transmit the disease even as long as ten years post infectionem. This is accounted for by the recurrence of late secondary manifestations, which may be roseolaform, or papulosquamous lesions on the palms and the plantar surfaces, or mucous patches, which occur especially on the buccal and genital mucosae. These he demonstrated to be contagious ten years after infection, and occasionally as long as thirty years after. The etiology of these recurrences is to be sought according to him in insufficient treatment. The danger from such cases is apparent.

His "Treatment of Syphilis," which first appeared in 1893, contained essentially everything that is known thereof today, with the exception of but two things, salvarsan and the spirochaeta pallida. It has well been said that Fournier was twenty-five years ahead of the rest of the medical profession. In this book he makes a strong plea for the treatment of syphilis no longer as a venereal disease, but as a social problem, and clinically as a chronic systemic infection.

He remarks as follows:

"What we learn at the hospital is the treatment of certain syphilitic lesions: but this is not the treatment of syphilis. It is not the treatment of syphilis as a diathesis—as a chronic disease requiring prolonged treatment of several years duration. This is because at the hospital we only have to treat the "episodes" of syphilis, if I may use the term; because, when hardly cured, or even only relieved of their actual lesions, patients hasten to leave and disappear. To treat syphilis is not only to attack and cure the manifestations of a day, or even of a period; it is also and especially to attack the disease as a whole—to attack it when patent and latent; to lay hold of its primary

cause. It is to institute with this object a treatment of long duration, almost chronic, which alone is sufficient to realize preventive effects."

He thus became the exponent of the interrupted treatment, as against the previously practised treatment of acute symptoms, only, and suggested his "Chronic Intermittent Treatment," biennial courses throughout a period of five or ten years, with the object of sterilizing the disease in its incipiency and then preventing its later accidents and its transmission to descendants. He has consequently very little patience with the abortive treatment of chancre, which consisted in the dissection of the glands, cauterization, and excision of the primary lesion. His views are well given in the following quotation:

"Langston Parker cauterized a chancre of only two hours duration, without preventing constitutional infection. Another case is reported concerning a man who ruptured his frenum during sexual intercourse. This was cauterized eleven hours afterwards with fuming nitric acid. The wound healed, but a month later the cicatrix became indurated, and secondary symptoms followed. Cauterization of a syphilitic chancre even in its earliest stage, is absolutely powerless to prevent constitutional infection.

"A young man had a slight abrasion of the prepuce after coitus. A few days afterwards he learned on good authority that the woman with whom he had connection had recently communicated syphilis to two of his friends. The next day circumcision was performed, and nothing happened for more than two months except slight glandular swelling, which was attributed to inflammatory reaction. Then a roseola appeared, soon followed by divers secondary symptoms, for which I treated him.

"Even if we amputated the penis as soon as the chancre appeared, syphilis would none the less certainly follow."

Incomparable as a diagnostician, the most advanced in methods of treatment, Fournier also directed his attention to the problem of prevention. He saw the grave dangers to society from the rapidly spreading disease, and he was foremost in instigation of prophylactic measures. He it was who founded the "French Society for Sanitary and Moral Prophylaxis," "a league against syphilis," an institution which has since become international.

In his lectures on "Syphilis and Marriage," he remarks:

"It will happen to you often, gentlemen, in the course of your practice, to see a patient, known or unknown to you present himself in your office, who, with countenance preoccupied, almost anxious, will address you as follows: 'Doctor, I am contemplating marriage. I have not always been discreet in my bachelor life, and what is worse, I have not always been fortunate. I contracted syphilis at such a time. I have had such and such accidents. I have been treated in such and such a manner. The matter is now a serious one to me. I have come to ask you if I am thoroughly cured and if I can, without danger for my wife, without danger for my prospective children contract the union which I propose.'

"Now when such a request is addressed to you, gentlemen, do not misapprehend the gravity of the situation. Your response involves interests the most serious, the most sacred, the most dear to the heart of every honorable man, of every respectable family, as well as interests the most diverse and the most multiplied. By this opinion which you are about to formulate, you incur a responsibility which I can not otherwise characterize than as considerable; and I do not think I exaggerate in saying that in the province of the physician there are few problems to solve on the one hand so grave, and on the other hand so complex, so difficult, so delicate, as this.

"Take my word for it, gentlemen, I have witnessed many scenes, many dramas of this kind, and I declare I know of no position more heart rending, more lamentable, more atrocious, than that of a man who has introduced the pox into his little household; than the situation of this man, first in regard to his disconsolate, weeping wife, whose tears are not even accompanied with recriminations, or complaints, for love and affection readily forgive; second, in regard to a new family that will not pardon, that has the right to be severe, and exercises that right; third, in regard to the infant, which miserably vegetates, and instead of being the beautiful child dreamed of by the relatives and the mother, is to everyone, even to the nearest of kin, but an object of disgust and horror; fourth, finally, in regard to an infected nurse, who threatens, who makes scandal, who divulges, who throws disgrace upon the family. Picture to yourselves such a scene, gentlemen, and judge of the regret, of the martyrdom of the man who has caused such afflictions.

"If it is not the province of men of the world and of patients to know what the effects of the pox not treated may be, after a long

interval, it is our province to know this, and to instruct those who are ignorant. It is our mission to divert from marriage every patient who presents himself to us with a syphilis, insufficiently treated; to dissuade him from it, to his own great advantage and to the great advantage of others, and to say to him, with the authority of our conscience and our character; 'No, sir, no, it is not allowable, in your present condition for you to dream of marriage. Until now, you have thought it best to live with the pox, to preserve the pox. That was your right, and no one had anything to say, for you were single, and consequently alone liable for your imprudence. But now, since you aspire to marriage, the situation becomes very different. To marry is to have charge of lives, and since you do me the honor to consult me, you make it my duty to remind you that you have not the moral right to associate others in your personal risks—that is to say, to make a wife and children share the possible consequenees of your disease.'"

This accompanies a most instructive treatise on syphilis in the family, and the physician's conduct therein. In the same book he considers the relations of syphilis to the wet nurse, and does not fail to emphasize the importance of the physician's refusing to allow a healthy nurse to suckle a syphilitic child. The most distressing example of failure to adhere to this rule, he quotes as follows: "A syphilitic child infects its nurse. This nurse, in order to empty her breast, suckles three nurslings, all three of which take syphilis. Each of these children infects its mother; each of these three mothers infects her husband. Count: ten syphilitic contaminations derived par ricochet from the syphilis of a nursling. And do they stop here?"

In his efforts to prevent syphilis in the locality wherein it is most frequently contracted, namely in the brothel, Fournier endeavored, through his "League Against Syphilis," to pass administrative measures in harmony with the following principles:

First, that prostitution creates a public danger, by the venereal contagion which it spreads among the community.

Second, that prostitution should be supervised, and if possible suppressed by the public authorities.

Third, that the system of free and nonsupervised prostitution is disastrous to the public health.

Fourth, that public solicitation, which forms the only external sign by which prostitution can be legally attacked, should be suppressed in all its forms.

He suggests the following measures for the control of prostitution:

1. "In the interest of public health, women recognized as guilty of public solicitation should be submitted to periodic medical examination.

2. "Those women who are found by this examination to be affected with venereal disease, especially syphilis, should be confined to a special venereal hospital.

3. "Registered women should be uniformly submitted to a weekly visit at a fixed date; also a supplementary surprise visit, which should be made monthly by a medical inspector.

4. "Each of these visits should be complete, and be directed chiefly to examination of the genital organs and the mouth.

5. "The special hospitals for prostitutes, the consultations, and the medicines should be gratuitous."

This altruistic work was, of course, opposed by many, so called "prudes," on the grounds that it interfered with the liberty of the women under consideration, it made of them slaves, domestic animals. Also, that it interfered with the course of justice; syphilis being a merited disease, those who subjected themselves to the possibility of infection were but receiving their just deserts. Further, that eradication of syphilis would remove all restraint from venerey, and that the disease should therefore be cherished, and carefully protected from extermination.

It is interesting to examine a few of Fournier's replies to these criticisms:

"This austere and unjust doctrine would take us several centuries backwards to the good old times, when syphilis was regarded as a well merited expiation, as a chastisement inflicted on sinners by the Divine wrath; when, in the hospitals for patients affected with the 'Great Pox,' as it was then called, a good beating constituted the whole treatment of the disease,—a method which had only an indifferent therapeutic effect.

"It does not recognize hereditary syphilis, syphilis in married women, syphilis of wet nurses, and sucklings, professional syphilis, domestic syphilis, accidental syphilis, etc. Let us ask these rigid moralists, how many men of our day are there who have not exposed themselevs to the risk of contracting syphilis, and 'merited' it, at any rate, once, in their lives? In truth, if those only, who are absolutely 'without sin' were authorized to 'cast the first stone,' at the unfortunate syphilities, I should

have little fear of the effect of the stoning on our patients.

"One of my patients, a respectable married man, after a dinner with some college friends, visited a brothel in Paris, 'out of curiosity.' Having several glasses of champagne too much in his head, he allowed himself to be led astray, and contracted syphilis, which he soon communicated to his wife.

"It is thus that syphilis often passes from the garret to the palace, from the lowest brothel to the virtuous woman's boudoir, and even to the child's cradle. Therefore, there is no hearth that can be indifferent to the prevention of syphilis. To cleanse the brothel is not only to protect those who frequent it; it is also to protect the family hearth, the honest woman, the child, and the race.

"The interference and regulation by the police, has been denounced as constituting an abuse of power, and even a violation of individual liberty. I confess that the liberty to give syphilis to the passers-by on the public thoroughfares seems to be as little rational as giving liberty to a mad dog.

"Let us, by good sense, enlightened by clinical experience, confer on society the right, I might even say the obligation, to defend itself against the terrible plague of venereal affections, and this I repeat, in the name of the sacred interests of the virtuous woman, the child, the family, and the country."

After a prolonged illness which had gradually robbed him of his health, and of his former marvellous keenness of thought, Jean Alfred Fournier died in December, 1914, very happily having been spared in his last days a clear consciousness of the tragic events that were happening in the field of battle about him.

If I have succeeded in imparting to you a portion of the enthusiasm, and the pleasure that I have experienced in the reading of the works of Alfred Fournier, let me close with this eulogy to him, written by one of his German confrères, since the onset of the present war.

"The news of the death of our great preceptor, fills us with deepest emotion. Our beloved teacher has left this earth to enjoy a deserved peace in the celestial fields. His abode, yonder must be one of the most beautiful, for his life on this earth was most fruitful for our science, and for all mankind. But we must content ourselves with his great works, which remain to us that we may still derive benefit therefrom."

DISCUSSION.

Dr. Udo J. Wile: Those of us who had the opportunity of listening to the life of Jonathan Hutchinson must be struck with the contrast between the lives of these two men. In the case of Hutchinson, a man who did his best work up to middle life. After that the infirmities of age came on him very rapidly and although he maintained his reputation to the last, it is sad to note that he held some theories which were ridiculous, for instance, the contagiousness of leprosy from the eating of bad fish, and the identity of yaws with syphilis. In the case of Fournier, up to the very last years of his life, a man well over 80, of a leontine type, extremely fresh manner and as impressive in his manner as he must have been when a young man. His book, Le Traitè de la Syphilis is still the only text which we have and that book, although it does not include the spirochete or the salvarsan treatment, is still admirably adapted to the student.

DO YOU KNOW THAT

Scarlet fever kills over 10,000 Americans each year?

He who builds up health lays up treasure in the Bank of Nature?

Intelligent motherhood conserves the nation's best crop?

Heavy eating like heavy drinking shortens life?

The registration of sickness is even more important than the registration of deaths?

The U. S. Public Health Service co-operates with state and local authorities to improve rural sanitation?

Many a severe cold ends in tuberculosis?

Sedentary habits shorten life?

Neglected adenoids and defective teeth in childhood menace adult health?

A low infant mortality rate indicates high community intelligence?

ARE DOCTORS NATURALLY POOR COLLECTORS?

Or why is it that so many of them permit their outstanding collections to get into such deplorable shape?

Undoubtedly there is quite a "knack" in collecting. If your own efforts are not getting the money, then by all means place your accounts in the proper hands for expert attention, for the longer the accounts stand the less you will realize on them. It's now generally conceded, too, that a number of bad accounts foretells declining prestige.

Read the ad. of the Publishers Adjusting Association on page VIII and send them your business. Firm, though diplomatic, their efforts get you the money.

Official Report Fifty-First Annual Meeting Michigan State Medical Society

Houghton, August 15-16-17, 1916

FIRST GENERAL SESSION.

MASONIC TEMPLE.

WEDNESDAY, AUGUST 16, 1916 AT 10 A. M.

The Society met in the Masonic Temple and was called to order at 10 A. M. by the President, Dr. A. W. Hornbogen, Marquette.

Rev. William Ried Cross delivered the following invocation.

PRAYER BY MR. CROSS.

Almighty God, the fountain of all wisdom, who alone can teach the minds of men and incline their wills to do Thy pleasure, we beseech Thee at this time to so illuminate the minds of the members of this convention and to so dispose their hearts and control their wills that their deliberations here may be in the furtherance of truth. Grant them seriously the solemn truth committed to them so that they may discharge their duties faithfully and with good conscience in Thy sight. Grant them such a spirit of discernment and such integrity of purpose that their conference will result in being a real contribution to the health and well-being of the people, so that Thy great name may be glorified and the people abundantly blessed. For these and all other mercies we thank Thee in the name of and through Jesus Christ Our Lord.

The Grace of our Lord, Jesus Christ, and the love of God and the fellowship of the Holy Ghost, be with you, evermore. Amen.

President Hornbogen then introduced Hon. G. T. Hartman, Mayor of Houghton, who delivered the following

ADDRESS OF WELCOME.

Mr. President, Ladies and Members of the Michigan State Medical Society: To me has been allotted the pleasant task to extend to you, on behalf of our people, a most sincere and hearty welcome, and to assure you of our deep appreciation of the honor conferred upon us by your choice of Houghton for your annual meeting.

While we greet you with open arms and with a warm welcome, we know that many of your homes regret your absence and long for your return, that you may administer to confiding patients, many of whom will count the days till you return. I know of no class of men who are so closely associated with the family life of our communities, as members of the medical profession. None have a better knowledge of the manner of living, the moral condition, the evils and sins of our communities, the joy and happiness, the sorrows and griefs of our people.

I may further truthfully say that no class of men, in any profession, undergo the same ordeals, mental and bodily strain, unselfish loss of rest, and faithful performance of duty, conspicuously notable of the men in your profession. None can compare in the beneficial results of your unceasing efforts for the relief of suffering humanity and the prevention of disease. So that your mission is a glorious one. You as benefactors of mankind are in a class alone. Devoted, unselfish, self-sacrificing, and I may add beloved by those who look to you for protection and salvation. Recognizing your importance to mankind, we give you the same warm-hearted welcome which your anxious patients will afford you upon your return to your homes.

We fully appreciate that whatever good results from your meeting will inure to the benefit of mankind. We trust that your deliberations and plans will be fruitful of much good and still further aid you in your noble and glorious profession. (Applause).

We trust also that your visit will prove to be a restful, pleasant vacation, which you no doubt deserve, and I know that every citizen will assist in every possible way to make your visit enjoyable, and that you will leave us with pleasant recollections of our big little town.

Assuring you that no one could receive a more hearty welcome from our people, and knowing that they will demonstrate this by their acts in providing for your comfort and enjoyment, I extend to you the freedom of Houghton. (Loud applause).

THE PRESIDENT: We will now listen to an address of welcome by Dr. P. D. Bourland, President of the Houghton County Medical Society.

ADDRESS OF WELCOME BY DR. BOURLAND.

Mr. President and Fellow Members of the Michigan State Medical Society: The Medical Society of Houghton, Keweenaw and Baraga Counties is proud to welcome the Michigan State Medical Society to the Copper Country. We are glad of the opportunity to pay the social debt which has been accumulating for so many years and equally glad to be able to introduce our part of Michigan and its interesting and more or less unique institutions

to such an important and influential body of men as that constituting the membership of this society, many of whom, I dare say, have never before visited this peninsula.

In order to accomplish these objects we have planned to spend as much time out of doors as is possible, under the governing circumstances, and we have tried to so arrange that sight-seeing and the pursuit of knowledge shall not come into too violent conflict.

The citizens of the entire district are much interested in this meeting. I really believe it cannot be disputed that we have the most unselfish and spontaneous citizens to be found anywhere. The promotion of this enterprise has been a positive pleasure, so many have been the offers of assistance and so general the manifestation of interest. This public acknowledgment of our indebtedness and this cordial expression of thanks are certainly due to our fellow citizens and should help to indicate to our guests the true measure of the welcome.

Among the features which may legitimately claim a share of your attention apart from the great object of your visit, are the medical institutions maintained in connection with ecrtain mining companies. A visit to these places, opportunity for which will be provided, will naturally lead to inquiry concerning the method of medical service generally prevalent throughout this district, namely, the so-called company medical service. We invite you to a thorough understanding of this subject with the feeling that your investigation may satisfy you that we are fully abreast of the times, if not a little in advance of them, viewing the situation from the meeting point of medicine and sociology.

In addition to the company hospitals, you will of course find commodious and thoroughly equipped public hospitals. It is not without pride that I mention in this connection the existence of a well managed and reasonably adequate tuberculosis sanitarium.

The mines and mills and smelters will not fail to interest you and to enlarge your view of the copper-producing industry. The magnitude of the equipment, the truly generous scale on which the business is conducted cannot but excite your wonder, and the precise methods by which the copper is separated from the rock, ranging, as they do from the Herculean operation of reducing to sand thousands of tons of rock each day, to the truly delicate physical and chemical methods of separating that sand from the most minute particles of copper must appeal to any one of scientific instinct.

The mining companies have very generously offered to furnish guides to all who may wish to visit their surface equipments.

In conclusion, gentlemen, I hope that you may catch and carry away with you some of the soul of the copper country. It is good to have it within you and about you. It is generous and helpful; it unites and stabilizes. It helps bring about a state of true fraternalism. It welcomes you most sincerely. (Loud applause).

THE PRESIDENT: In behalf of the members of the Michigan State Medical Society, I desire to express our thanks and appreciation for the cordial words of welcome that have been extended to us. For the first time in its history, this Society has selected for its place of meeting the Upper Peninsula of Michigan, a part of the state so wondrous in its beautiful scenery, so magical in its charm, and so romantic in its history. These things, together with its wonderful development, its unlimited resources, and its hospitable people, will tend to make our stay most enjoyable and instructive. I thank you. (Applause).

It gives me very great pleasure to introduce to you Dr. C. B. Burr, of Flint, who will respond to the address of welcome on behalf of the profession of the Lower Peninsula.

RESPONSE BY DR. BURR.

Mr. President and Members of the Michigan State Medical Society: This is wholly a new function, and I have been somewhat at a loss to know how to pull it off. We come, Mr. President, from the lower regions of the state—get the words "lower regions"—with apologies to Porter Emerson Brown who recently wrote that since Michigan put up Ford for President it was not legally entitled to be called a state but merely a condition. (Laughter).

We come from the lower regions in other portions of the state to pay our compliments to you men of the Upper Peninsula, whom we know so well and whom we love so well. We come actuated by different motives. Some are here actuated by purely scientific motives with that end in view, while others come with a desire to partake of the great hospitality of the Upper Peninsula for which it is so famous. We are all moved by that to a large extent, namely, the hospitality which has been so generously offered to all of us. A good many have come here with both of these ends in view.

One member of the society intimated to me that it would be a good thing to bring my golf sticks here. That man, Mr. President, was a former president of this Society. He said, "Bring your golf sticks; I am going to take mine." I spurned the suggestion as I thought it was extremely disloyal to the Society that a man should come up here with the idea of playing golf; and besides, I don't play golf well myself. (Laughter). But we are all a unit in one motive.

There were very pronounced rumors in the lower part of the state last year that this peninsula was going to secede from Michigan, and we came up here, all of us, to look around and see what there was in it. We came up here wearing our pleasantest smiles and best clothes and displaying our choicest manners in the hope of making ourselves so agreeable to you that you will never think of it again. (Applause). That is one reason why we are here, and it pays to do what I have just said we are trying to do.

I saw in the *Mining Journal* this morning an item to this effect, that for good looks we will match the Michigan State Medical Society with any society we have ever entertained in Houghton, including the bankers, the firemen and Knights Templar. (Applause). That is what good looks and good manners do.

Mr. President, this is a part of the country of great romantic interest as you have so well said, and we have come here fully expecting to enjoy ourselves to our heart's content, and we accept the hospitality which you have so gratefully extended to us, and we only ask that you people up here will regard us from this time on as deputy citizens of the Upper Peninsula. (Loud applause).

Dr. A. F. Fisher, Chairman of the Committee of Arrangements, made announcements as to the places of meeting of the various sections, and called attention to the entertainments that had been provided for the members of the Society and their guests.

The President then introduced V. Rev. Francis X. Barth, of Escanaba, who delivered an address entitled "Papal Physicians."

At the conclusion of the address, which was punctuated throughout its delivery with applause, Dr. Sawyer, of Hillsdale, moved that a vote of thanks be extended Father Barth for his absorbingly interesting, scholarly and instructive address, which motion was supported by several and carried unanimously by rising vote.

At this juncture, Dr. Louis J. Hirschman, of Detroit, Second Vice-President, took the Chair, and President A. W. Hornbogen delivered his address. He selected for his subject "A Review of Medicine and Surgery With Especial Reference to the European War."

Under the head of Miscellaneous Business, Dr. F. B. Tibbals, of Detroit, said: Mr. Harper Barber who, for the Medico-Legal Committee tries cases all over this state writes me of two judges before whom he has tried cases, and of the two, Judge Main, of Charlevoix, stands out preeminently as being in a position to take and accept the viewpoint of the doctors. He is a candidate for the Supreme Bench among other men. I do not know who the other men are, but I thought this matter was of sufficient importance to the medical profession in this state to bring it before you. We do not want partiality on the Supreme Bench; we want simply justice, and to get that we must be interested in having a man on the Supreme Bench who sees the doctor's viewpoint as the ordinary lawyer, learned though he be, does not. Judge Main is the father of a doctor who has been interested in medicine always, and with him on the bench we may be sure of justice in those cases which reach the Supreme Bench on appeal. Therefore, I want to suggest to you that you carry this name home with you and use your influence with your friends in voting at the primaries for Judge Main of Charlevoix. (Applause).

It was moved that the automobile ride, which was set for 3 p. m., be postponed until 5 p. m. to give time for the section work. Seconded.

Dr. Fisher, of Hancock, called attention to the fact that automobiles had been arranged for definitely at 3 o'clock, and that any change would cause great inconvenience.

Dr. C. B. Burr, of Flint, moved as an amendment that the Society comply with the wishes of the Local Committee of Arrangements. Seconded.

Dr. Reuben Peterson, of Ann Arbor, moved as a substitute, that because of the hospitality extended by the physicians of the Upper Peninsula, the Society omit its section meetings this afternoon and go on a joy ride.

The substitute was seconded and on being put to a vote was declared lost.

Dr. Brooks then moved that the sections meet at 1 and end promptly at 3 p. m.

This motion was supported by several and carried.

NOMINATION FOR PRESIDENT.

Dr. Don M. Campbell, Detroit: It is hardly necessary to place in nomination for the Presidency of this Society the name of a man who has done so much for it. He has the record of having attended all meetings of this Society for a quarter of a century. He has lent his influence to the best activities of the executive part of the Society—the Council. He has enriched the scientific meetings of the sections. Among his friends he is known as "Andrew the ready." He was born ready; he will always be ready, and he is ready to further the best interests of the Michigan State Medical Society. I therefore take great pleasure in presenting the name of Andrew P. Biddle, of Detroit, for President for the ensuing year. (Applause).

Dr. J. A. MacMillan, Detroit: I do not know of anything that gives me greater pleasure than to second and support the nomination that has been made. Dr. Biddle has been one of the most indefatigable workers in the Michigan State Medical Society. He has probably done more to mould its constitution and to bring our society to its present state of efficiency than any other man. As a physician, he has more than a state wide reputation. He has a national reputation. He is eminently fitted by his attainments and by his high character to do honor to the position of President of this Society. He is a man of great executive and administrative ability and will reflect honor on us as physicians by electing him to this office.

Down East there was an eminent visitor from Europe. I believe he was visiting New York and was being entertained socially for some years. They met this man and spoke of him as a Biddle. Some of them said, "What on earth is a Biddle?" We do not have to ask that question in the State of Michigan. We know of but one Andrew Biddle, and I take great pleasure in seconding the nomination.

Dr. A. M. Hume, of Owosso: Believing that I am personally representing the medical profession

outside of Detroit, I take great pleasure in seconding the nomination of Dr. Biddle.

Dr. Charles H. Baker, Bay City: I take the same position as Dr. Hume, and consequently I heartily second the nomination of Dr. Biddle, and if there are no other nominees, I move that the nominations be closed and that the Secretary be instructed to cast the unanimous ballot of the Society for Dr. Biddle at the proper time.

Seconded and carried.

Adjourned.

SECOND GENERAL SESSION.

The Second General Session was called to order in the Masonic Temple by President Hornbogen at 11:30 on the morning of August 17, 1916. The minutes of the previous meetings of the House of Delegates were read by the Secretary.

Moved by Dr. Burr, Flint, seconded by Dr. Hirschmann, Detroit, that the report of the House of Delegates be adopted as read. Carried.

Moved by Dr. W. T. Dodge, Big Rapids, that the Secretary be instructed to tender a letter of sympathy to Mrs. J. B. Murphy of Chicago expressing the sincere sympathy of the profession in Michigan in the death of her distinguished husband and that the condolence of the Society be expressed to her.

Seconded by Dr. A. P. Biddle, of Detroit. Carried.

RESOLUTION DR. C. D. BROOKS OF WAYNE.

On behalf of the delegates representing the lower peninsula and in behalf of all the guests and members present I move you, Mr. President, that we extend a rising vote of thanks to the members of the Houghton County Medical Society for the entertainment and pleasure they have afforded us. I also move that the vote of thanks be conveyed to the Officials and Citizens of Houghton for their courteous and generous hospitality and to the local Press. Those of us who are from down below know how to appreciate this hospitality and it would be useless for us to try to meet it. (Applause).

Carried by rising vote.

The following resolutions presented by Dr. C. B. Burr, Flint, was adopted unanimously.

WHEREAS: Military exercises in early life favor a high degree of mental and physical development through quickening preception, improving organic functions and developing muscular and bone structures and

WHEREAS: Marching under the flag of the country, the symbol of governmental authority inculcates obedience, encourages loyalty and furnishes discipline in self control, Therefore be it

RESOLVED: That the Michigan State Medical Society recommend universal military training and request the Michigan Congressional Delegation to exert itself to bring about effective legislation to this end.

RESOLVED: That copies of these resolutions be furnished by the Secretary to every member of the House of Representatives and Senate of the United States and to the various leagues and organizations interested in the propaganda for National defense.

The Secretary announced that 215 ballots were cast for Dr. A. P. Biddle, of Detroit, as President. President Hornbogen declared Dr. Biddle elected as President for the ensuing year and appointed Dr. Burr of Flint and Dr. West of Painesdale to escort the newly elected President to the Chair.

Dr. Hornbogen to President Biddle:

I take great pleasure in presenting you with this gavel which is an emblem of the Copper Country and which is the present of Dr. A. T. Abrams of Dollar Bay. I also feel proud to have the honor of pinning this badge of "President" upon you. I know it is the opinion of every member in the Society that you have indeed earned the honor of President which is now bestowed upon you.

Dr. Biddle responded as follows:

I wish to express the feeling which naturally occurs to one after the acceptance of such an honor as you gentlemen have conferred upon me. I am especially happy that this has taken place in the Copper Country because it is here I had the honor to be made Secretary of the Society some years ago and when I think of the many presidents who have gone before me and the problems they have met, I realize the importance of the duties of the President in behalf of the profession of our State Society. However, when I think of the good men who have gone before me, such as Frothingham, McLean, and Connor I somehow have the feeling in my heart that I did not deserve this recognition; but the love I have for you shall reflect back into me and I will thus be stimulated to do good work next year. Gentlemen, I accept with pleasure and gratitude this honor.

It was moved by Dr. Brooks of Wayne that the meeting adjourn. There being no further business the meeting adjourned *sine die*

A. W. Hornbogen, President.

F. C. Warnshuis, Secretary.

COUNCIL.

The annual meeting of the Council of the Fifty-First Annual Meeting of the Michigan State Medical Society was called to order in the Red Room of the Douglas Hotel at Houghton at 6:15 p. m., August 15, 1916 with Chairman Dr. Dodge presiding and the following Councillors present. W. J.. Kay, A. L. Seeley, C. H. Baker, W. T. Dodge, W. J. DuBois, C. T.

Southworth, A. M. Hume, B. H. McMullen, President A. W. Hornbogen, F. C. Warnshuis, Secretary.

The minutes of the last meeting were approved as published in the February, 1916 issue of the *Journal*. Dr. W. T. Dodge then presented the following annual report of the Council to be submitted to the House of Delegates as follows: (See Proceedings of House of Delegates).

It was moved by Dr. DuBois and supported by Dr. Seeley that the report of the Council to the House of Delegates be adopted and approved as read. Carried.

It was moved by Dr. DuBois supported by Dr. Southworth that the Secretary be instructed to draw up suitable resolutions expressing the Council Members' profound and sincere sympathy to Dr. Dodge in his bereavement in the loss of his wife and that a copy be sent to Dr. Dodge and also spread on the records of the Council. Carried.

RESOLUTION.

Cognizant of the loss sustained by our Chairman, Dr. W. T. Dodge, in the death of his wife, Mrs. Dodge, we, his fellow Councillors of the Michigan State Medical Society inscribe upon our records and tender to Dr. Dodge the following resolution expressive, insofar as words can express, of our sympathy and friendship:

We realize that in the death of Mrs. Dodge there has been sustained by our Chairman, the loss of one whose womanhood's morning almost touches noon, and while the shadows were still falling toward the west. One who believed that happiness was the only good, reason the only torch, justice the only worship, humanity the only religion and love the only peace. The record of her generous life runs like a vine around the memory of her, and every sweet, unselfish act is now a perfumed flower. Possessed as she was of those qualities that endeared her to all who knew her and above all a true wife to him who is left to mourn, her death has caused a vacancy that time cannot fill.

THEREFORE BE IT RESOLVED, That we, the members of the Council of the Michigan State Medical Society, do hereby tender to Dr. Dodge the assurances of our heartfelt sympathy and sorrow in the bereavement that he has sustained. That we reiterate to him the fact that the esteem in which he has always been held by the profession of Michigan surrounds him, at this time, with tender friendship with which, if possible, to alleviate the sorrow that has overtaken him. And lastly to express to Dr. Dodge the assurance that though alone, an abiding place remains open to him in the hearts and homes of each of his fellow Councillors who sincerely mourn with him.

Dr. Hume, Chairman of the Publication Committee submitted the following correspondence:

To Members of Publication Committee.

Guy L. Kiefer, Detroit.
W. J. Kay, Lapeer.
W. J. DeBois, Grand Rapids.

Please carefully read attached letter of our Secretary-Editor, express your opinion, sign immediately, forward to next on the list.

July 15, 1916.

Dr. A. M. Hume, Chairman, Publication Committee,
Michigan State Medical Society, Owosso, Mich.

My dear Doctor Hume:

The trend toward the sky in the "High Cost of Living" has made itself felt in the matter of the publication of the *Journal*. I have made it a point to keep in touch with the paper and ink market during the past six months and its constant rise in prices has caused me no little concern.

The paper that we are using cost us last year approximately four cents per pound. The contract we then made for the publication of *The Journal* enabled our publisher to purchase a year's supply, approximately eleven tons. This contract expires with the September issue.

Since last summer the paper we are using has increased so that now it is a fraction over nine cents a pound thereby costing us for a year's supply at the present price $1,980 in contrast with $880 that we paid last year.

I learned on Monday of this week that on the fifteenth of this month there would be another 20 per cent. increase. I further learned that we might expect another 20 per cent. increase in the next thirty days. I wired two paper mills and asked them for their quotations on eleven tons of paper for delivery in sixty days. I received reply that *they could not quote me prices and that they were not in position to fill the order.* I then got in touch with a jobber and he wired that he would fill the order at 9⅜ cents if placed at once.

I then went to the Tradesman and asked them to submit contract for publishing the *Journal* for another year. I also went to three other local printers and asked them to submit bids. These bids were received on the 13th. The Tradesman quoted us $372.75 for 2,600 copies per month of 80 pages Two other firms were at $400.00 and one firm at $362.00 or ten dollars less than the Tradesman.

These quotations are actually $100 per month more than we have been paying—due to the cost of paper and ink—the cost of ink has increased 1000 per cent.

These quotations were submitted with the proviso that the contract would be executed before noon on the 14th., in order that the paper might be secured at the present price and before the 20 per cent. raise on the 15th.

Realizing that delay in executing this contract would cause us to pay the increased price which would amount to some $400 additional and if we waited until September for the present contract to expire then we would experience an increased cost of some $800, I got in touch with Dr. Dodge, Chairman of the Council via long distance phone and after explaining the situation to him he authored me to execute the contract submitted by the Tradesman. This I did on the morning of the 14th.

I believe that in doing so we have saved the *Journal* some $400 to $800 dollars.

I have explained this matter to you in order that you might be informed as to the circumstances that existed and the sudden necessity that arose for prompt action. Also to assure the Committee that there was no intention on my part to ignore them in this matter.

I believe that this action has been justified and in the best interest of our publication and members. There is, however, another problem that confronts us and I am submitting it to you for your consideration and for action by the Council at its Houghton meeting.

At our new price of cost of publication and with our present advertising and subscription receipts if we continue to publish a monthly issue of our present size we will be in the hole some $400 or $500 at the end of the year. In the past four years the *Journal* has been the revenue producing factor of our State Society. Whatever profits that have been realized at the end of the year has been due to the earnings of the *Journal* and *not* to the income from member's dues. In fact, *The Journal* has paid some of the expenses of the Society and even then shown a profit. This will now be changed and in place of profit we will have a deficit of from $400 to $800 at the close of the next year.

It is this matter that requires consideration and action and I am submitting two courses that may be adopted to avoid this deficit. I would like to be in receipt of instruction as to the course that should be pursued.

1. Reduce the size of the publication to 60 pages per issue. In doing so, however, we will take a backward step and cause our publication to step down from its high position that it now holds in the field of State Medical Journals.

2. To increase the subscription price to $1.50 per member thus causing each member to pay fifty cents more in annual dues. This would mean that the state dues be raised to $3.50 per member and would of course necessitate presenting an amendment to our By-Laws at the Houghton session of our House of Delegates. Certainly this would not be a burden to each member and would enable *The Journal* to continue in its present state.

From the above you will see the problems that confront us and which deserve the attention of your Committee and also the Council. Personally, I am of the opinion that a better plan to adopt is to increase the membership dues in order that the *Journal* may receive a 50 cent additional subscription revenue and then it will be able to maintain its independent existence and the Society as a whole will not be compelled to retrench or experience a deficit at the end of the year.

If there is any other information that you desire, you know that I will be only too glad to place it at your disposal.

I await the instructions of your Committee for further action on my part.

Yours very truly,

F. C. Warnshuis,
Secretary-Editor.

I believe it best to raise annual dues 50 cents.
A. M. Hume.

Raise the annual dues 50 cents and in this way keep up the *Journal*, by all means the better plan.
Guy L. Kiefer.

I think increasing the annual dues the better way.
W. J. Kay.

It is best to raise the annual dues.
W. J. DuBois.

Adjourned to meet as per the schedule in the Official Program.

SECOND SESSION.

The second session of the Council was called to order in the parlor of the Douglas House at Houghton at 12:30 noon August 17, 1916, Chairman Dodge presiding and the following Councillors present: A. L. Seeley, B. H. McMullen, F. C. Witter, C. H. Baker, A. M. Hume, W. J. Kay, R. S. Buckland, C. T. Southworth, W. J. DuBois, W. T. Dodge, newly elected President A. P. Biddle and Secretary Warnshuis.

Moved by Councillor Baker, supported by Councillor Kay that the expenses of Dr. Loeb be paid. Carried.

Moved by Councillor Baker supported by Councillor Hume that the Finance Committee of the Council be instructed that it is contrary to the policy of the Society to pay the expenses of invited guests. Carried.

Moved by Councillor Kay supported by Councillor Witter that the designation of a place for holding our 1917 meeting be deferred until the January Session of the Council. Carried.

Moved by Dr. DuBois, supported by Dr. McMullen that the gavel presented to the State Society by the profession of the Copper Country be placed in the custody of the Secretary and that from year to year there shall be caused to be engraved upon the handle of the gavel the names of the presidents that wield it. Carried.

The Chairman then introduced the newly elected President, Dr. A. P. Biddle, who gave a brief talk expressing his appreciation and joy at being again authorized to attend the meetings of the Council in an official capacity.

Moved by Dr. DuBois, supported by Dr. Seeley that the Secretary be authorized and instructed to cause to be printed 1,000 copies of the Constitution and By-Laws as revised to date.. Carried.

Moved by Dr. Hume supported by Dr. Buckland that the Council hold its January meet-

ing in Detroit at a date to be designated by the Chairman.

On motion of Councillor DuBois, seconded by several, the Secretary was instructed to cast the ballot of the Council for Dr. W. T. Dodge as Chairman for the ensuing year. The Secretary did so cast.

On motion of Councillor Seeley, supported by several, Councillor W. J. Kay was elected Vice Chairman of the Council.

There being no further business the Council adjourned to meet in its regular midwinter session which will be held in January in Detroit.

W. T. Dodge, Chairman.
F. C. Warnshuis, Secretary.

HOUSE OF DELEGATES.

The Fifty-First Annual Meeting of the House of Delegates of the Michigan State Medical Society was called to order in the room of the Houghton Club, Houghton, Michigan, August 15, 1916, at 8:30 p. m. with President Hornbogen presiding and the following delegates responding to roll call:

Bay-Arenac-Iosco—J. W. Gustin, Bay City.
Benzie—E. J. C. Ellis, Benzonia.
Clinton—A. E. Hart, St. Johns.
Delta—A. W. Miller, Gladstone.
Grand Traverse-Leelanau—E. P. Lawton, Traverse City.
Houghton-Baraga-Keweenaw—W. H. Dodge, Hancock.
Kent—A. J. Baker, Grand Rapids.
J. D. Brook, Grandville.
Lapeer—D. J. O'Brien, Lapeer.
Lenawee—I. L. Spaulding, Hudson.
Macomb—J. McCorman, Mt. Pleasant.
Marquette-Alger—C. F. Moll, Kenton.
Monroe—P. S. Root, Monroe.
Montcalm—A. S. Barr, Greenville.
Muskegon-Oceana—V. A. Chapman, Muskegon.
Oakland—A. B. Corbit, Oxford.
Ontonagon—E. J. Evans, Rockland.
Ottawa—J. J. Mersen, Holland.
Presque Isle—W. W. Arscott, Rogers City.
Shiawassee—J. A. Rowley, Durand.
St. Clair—J. L. Chester, Emmett.
Washtenaw—R. R. Peterson, Ann Arbor.
Wayne. All Detroit—W. J. Wilson, R. E. Mercer, Joseph Andries, J. A. McMillan, C. D. Brooks, F. B. Walker, L. J. Hirschman, F. B. Tibbals, D. M. Campbell, R. C. Andries, Guy Conner, B. R. Shurley, G. E. Frothingham.

The delegates responding to roll call were all seated and the House duly organized for business.

It was moved that the minutes of the last annual meeting be approved as published in the *Journal* of October, 1915.

COUNCIL REPORT.

The annual report of the Council was read by Dr. W. T. Dodge, Chairman of the Council as follows:

Journal.—At the beginning of the new year we have to face the fact that the cost of publication of our *Journal* has increased approximately $100 per month, owing to the increased cost of paper. This necessitates raising the annual dues 50 cents or reducing the size of the *Journal.* Action upon this question is requested of the House of Delegates. The Council recommends that the dues be increased.

County Societies.—There is lack of interest and energy shown in many of our County Societies. Many of them do not send reports of their meetings to the *Journal.* We recommend that all Societies be requested to arrange for meetings during the fall, to which the Councillor of the District shall be invited, and that a general survey of conditions in each county be made with a view to stimulating interest where it is now lacking.

Tuberculosis Survey.—The hundred thousand dollar appropriation for a tuberculosis survey was made by the last Legislature on its own motion as a result of newspaper agitation. It was not recommended by representatives of this Society, and so far as has been made public there is no evidence that it was requested by the State Board of Health. The Medical Profession recommended that full term Health Officers be provided for so that competent officials specially trained in public health matters should be at all times available to assist in stamping out all kinds of preventable diseases.

This expert advice was ignored by the Legislature and the special appropriation above referred to was made. The State Board of Health was designated as the body to expend this money and it was hoped that it would be so expended as to furnish us with valuable information concerning the prevalence of this disease in our State and that efforts would be made to spread the gospel among the people of improved Public Health regulations generally. Perhaps this has been done, but if so the fact has been concealed from the profession most thoroughly. Reports from some counties where the survey has been completed are to the effect that members of the local profession have been offended by the methods followed, and express doubt concerning its usefulness. This is an unfortunate state of affairs because if the facts brought out by this survey do not result in demonstrating to the people the usefulness of Public Health work we may be sure that the cause of full term Health Officers in small cities and rural districts will receive a decided set-back. One criticism that seems to be well taken is that at least one physician has been employed who is not a legal practitioner in this state. We recommend that the House of Delegates request the State Board of Health to furnish a complete detailed report of the work already done and make available to the Profession information concerning the good results accomplished and anticipated.

The Wine of Cardui Suit.—The profession was

defeated technically. The one cent damages awarded shows that the verdict must have been a compromise and is convincing evidence that traitors in our ranks were responsible for our discomfiture. Members of our organization were willing for a price to testify in behalf of the patent medicine interests. We recommend that the House of Delegates pass a resolution condemning such traitors and assuring the parent organization that the profession of Michigan is and will ever be ready to uphold every reasonable effort that is advanced to continue the propaganda of education in matters of patent nostrums and frauds.

The General Session.—All who have attended the last three sessions of this Society doubtless have pleasant recollections concerning the General Sessions and the excellent programs there presented. These programs were arranged on their own initiative by the presiding officers Burr, Kiefer, and Peterson. The pleasure derived from them suggests that it would be wise to provide at every session for a program at the general session that will interest every member in attendance. The President should be authorized to appoint a Committee of which the Secretary shall be one to arrange a suitable and instructive program for the first General Session. The time devoted to this meeting is too valuable to be wasted in rhetorical outbursts and common platitudes.

Legislation.—The July and August numbers of the *Journal* contain editorials calling attention to proposed bills to be introduced in the next Legislature providing for enactments tending toward providing industrial insurance. The medical profession is vitally interested in such legislation as contract medical attendance in illness of employees or their families is likely to be one of the features. The time is approaching when it may be useless to protest against such legislation. Our members owe it to themselves to post themselves upon this subject and to provide that our representatives shall carefully watch the progress of such proposed legislation and protect the interest of the profession as far as possible. To this end if your Legislative Committee should call upon you for assistance in bringing influence to bear upon your Senator and Representative you should give prompt response.

Sick and Accident Insurance.—We recommend that a committee of three be appointed to consider the advisability of the State Society creating a Sick and Accident Fund for its members. This committee should investigate the loss ratio of Insurance Companies engaged in this business and present their report at the next annual meeting.

Authorizing the Title of Specialist.—The Council has been asked to recommend that it be authorized to issue certificates to members showing special qualifications, and restricting their practice accordingly, testifying that the State Society recognizes them as qualified specialists in their particular field. We are not agreed that it would be the correct or wise thing to do and therefore call it to the attention of the House of Delegates without recommendation. We are agreed that it would be advantageous if such power were legally delegated to the State Board of Registration, and if special requirements were made of men entering the profession before they are legally authorized to perform major surgical operations. The time is surely coming when the line will be more sharply drawn between Physicians and Surgeons.

Medico-Legal Fund.—The advantages of this fund to our members has never been more forcibly exemplified than during the past year both in regard to the number of our members who have been assisted and in the number of suits started against Michigan physicians who are not members of their County Societies. During the year it has developed that there is a discrepancy in two sections of our By-Laws. An application was made for defense in a Chicago Court by a former member of our Society for an action commenced for an alleged offense committed at a remote date, to which the Statute of limitations would have barred action in this state. The question of liability of our Society was referred to the Chairman of the Council, who relying upon Sec. XI, Chap. IX of our By-Laws, which reads "The Medico-Legal Committee shall undertake the defense of any member of the Society sued or threatened with suit for civil malpractice, regardless of the time when the alleged cause of action arose," ruled that the Society was liable. It was then called to his attention by the Chairman of the Medico-Legal Committee that section 14 provided that defense should be "carried through all Michigan Courts." We therefore recommend that the following amendments be made to our By-Laws. That Sec. XI, Chapter IX be amended to read "Shall undertake the defense of any member of the Society sued or threatened with suit for civil malpractice through all State and Federal Courts operating in Michigan, etc." that Sec. XIV be amended to read "and defense carried through all Federal and State Courts operating in Michigan."

Honorary Members.—We recommend the election of W. A. Whitney of Big Rapids, Geo. W. Jones, Imlay City and Wm. Blake of Lapeer as resident honorary members and Dr. I. N. Albee of New York as non-resident honorary member.

W. T. DODGE, Chairman.

The report was referred to the Business Committee.

Dr. L. J. Hirschman made the following report in behalf of the Delegates to the American Medical Association.

"Michigan as usual was represented by its full quota of delegates. The meeting held in Detroit had a total registration of 4,586 of which the State of Michigan contributed 25 per cent. which is rather a remarkable showing owing to the fact that Michigan is rather a large state and many of the doctors had to travel so far. There were two or three actions taken at the Detroit meeting which were important. One, the appointment of a Speaker at the House of Delegates, who holds office for a term of two years. It has been found in the past that the honor of being President of the American Medical Association has been tendered to men who have achieved fame and distinction and not to presiding officers and it tied the President down to arduous work when his time should have been free for social activities. The House of Delegates will be presided over by a permanent speaker and the President afforded time for other duties.

The officers elected at Detroit revealed that the Association was unusually generous to the State of Michigan and the following Michigan members of our state were honored:

Dr. J. H. Carstens, Detroit, Third Vice President.

Dr. H. R. Varney, Detroit, Chairman Section on Dermatology.

Dr. H. W. Longyear, Detroit, Chairman Section on Gynecology, Obstetrics and Abdominal Surgery.

Dr. C. W. Hitchcock, Detroit, Chairman Section on Nervous and Mental Diseases.

Dr. L. J. Hirschman, Detroit, Secretary, Section on Gastro-Enterology.

A scientific medal of honor was awarded Dr. J. W. Vaughan of Detroit for his work in Cancer Research.

"The meeting as a whole, judging from the reports in *The Journal of the American Medical Association* and other journals which have reached us after the close of the meeting of the Association, was most successful both in excellence of the scientific program and the fact that the weather man was very kind."

This report was accepted and placed on file.

The report of the Committee on Venereal Prophylaxis was submitted as follows:

REPORT OF COMMITTEE ON VENEREAL PROPHYLAXIS.

The report of the Committee on Venereal Prophylaxis expressed itself last year as not in favor of the adoption of a Eugenic Law, such as is in operation in the State of Wisconsin to-day. The ever-increasing prevalence of syphilis and gonorrhea among the citizens of Michigan, not only in the large cities but in the smaller communities as well, must be apparent to all practitioners of medicine. The spirit of personal liberty enables individuals having this disease to contract marriage and transmit the disease to their consorts and in turn to their children, without restriction, thus making an endless chain of infection, which is fast undermining the health of the community. As a vast number of these cases occur among the poor classes in the state, it naturally follows that the individuals themselves by the development of sequelae which render them unfit, are fast becoming a burden to the state and a constant economic loss to the community.

Paresis and other forms of central nervous syphilis are on the increase among the indigent of the state. The State Hospitals are caring for an ever-increasing number of such patients. The University and other Hospitals are treating more cases each month of syphilis and gonorrhea in children, the innocent victims of the indiscriminate marriage of individuals afflicted with these two diseases.

Your Committee has been advised by expert legal opinion that the passage of a workable eugenic law, which would be just to the individual, and which would be a saving to the State in the end, could not pass the legislative body if it came directly from the doctors of the state. It appears to your Committee that the Michigan State Medical Society should place itself on record at this time as in favor of legislation, restricting the marriage of individuals having syphilis or gonorrhea.

After due study of the various measures which have been suggested in other states, your Committee believes that a proper Eugenic Law should embody the following main points:

1. No individual, male or female, should be permitted to contract marriage in the State of Michigan unless a physician of good standing shall have attested to the freedom from syphilis and gonorrhea of such individuals, as shown by careful examination and complement fixation tests for both diseases.

2. There should be an adequate penalty for any minister, justice of the peace or other person entitled by the State to perform the marriage ceremony who does so, in the absence of the before mentioned freedom from syphilis and gonorrhea, as attested by a reputable physician.

3. (a) There should be an adequate penalty for any physician or other person in the state who issues a certificate of good health to any individual or individuals without an examination and without a complement fixation test for both gonorrhea and syphilis.

(b) In order to insure uniformity of results and to lessen the possibility of error, your Committee believes it advisable that the complement fixation tests be carried out only in state laboratories or such laboratories as are approved by the American Medical Association.

4. The law should provide a minimum fee of $10.00 for the examination, such as is outlined above.

5. The law should provide that any person not able or willing to pay this minimum fee shall be entitled to the examination free of cost at any of the state institutions.

The passage of such a law would protect the community from the ever-increasing spread of syphilis and gonorrhea. It would restrict the marriage of individuals only so far as the good of the state and community at large were concerned.

The passage of such a law would inevitably work hardship upon certain individuals, who had no active syphilis or gonorrhea but whose complement fixation tests showed positive results. It would further work hardship upon such individuals who may have had gonorrhea or syphilis and who are past the child-bearing period. To deal with this class of cases, your Committee recommends that the law provide a Court of Appeal to consider the marriage of the indivdual cases in which the community itself would not be endangered. Such a committee could consist of the State Board of Health and any such appointees as this body should see fit to appoint to

It appears to your Committee that the passage of such a law could only be possible through a campaign of publicity. Therefore it is the sense of your Committee that the doctors of the state should interest themselves and their respective communities in a campaign of education. The family physician can do much in both large and small communities to influence public sentiment in favor of public health measures.

If it be the sense of the Michigan State Medical Society that the passage of a Eugenic Law, as has been outlined, is desirable, then it is the sense of your Committee that the doctors of the state should give publicity to the ever-increasing prevalence of

syphilis and gonorrhea in the state and their attendant dangers to the community and that they should by campaign and private instruction influence public opinion toward the passage of a Eugenic Law which shall be operative in the near future, and which shall place the State of Michigan as the foremost of the states in the safe-guarding of its citizens from the worst of modern plagues.

The present law requiring the reporting of both gonorrhea and syphilis is, so far as your Committee is aware, not effectively carried out in any town or city of the state. The advantages of such reporting from the standpoint of the incidents of the diseases in question and from their control as communicable diseases is apparent to every one. The failure to report these diseases has been due to the lack of co-operation of the physician themselves, prompted by the belief that by so doing their patients are given undue publicity. It seems to your Committee that any legislation, involving the restriction of marriage of patients having syphilis and gonorrhea could not be carried out as a public health measure unless it were accompanied by some form of enforced reporting. Realizing, however, that opinion is divided as to the advisability of such reporting, your Committee desires the sense of the Society on the advisability of such measures before recommending that they be made a part of the proposed Eugenic Law.

Udo J. Wile, Chairman.
A. E. West.
Harry W. Plaggemeyer.

Report of Committee on Medical Education. (No Report).

Report of Committee on Legislation and Public Policy by Dr. Hume was read as follows:

REPORT OF COMMITTEE ON LEGISLATION AND PUBLIC POLICY.

Your Committee on Legislation and Public Policy begs leave to report briefly as follows:

Three years ago there was brought about concerted action between this committee and the State Board of Registration in Medicine in the enforcement of the Medical Practice Act; or to speak precisely, this Committee pledged the good will and co-operation of the Michigan State Medical Society in assisting the State Board of Registration in Medicine in endeavoring to enforce our medical laws, and in ridding the profession of so-called practitioners who were preying upon the public.

This co-operative work has been carried along since that time, and progress has been made. Inasmuch as no session of the Legislature has been held during the past year there has been no call for active Legislative work by your Committee; and it is therefore, of the work of the State Board of Registration, that we shall report to you.

The matter presented has been furnished by the Secretary of the State Board of Registration from the official records, and in presenting this for your consideration we invite not only your questions to elicit full information upon any point desired by you, but your criticism if such you may have. You must understand, however, that if the work done by the State Board of Registration has not always been productive, failure has usually been due to the lack of co-operation on the part of the medical profession in that vicinity. This means *you,* Gentlemen, and if you would have a clean profession in Michigan, you must first clean *your* own doorsteps, *your* homes and *your* back yards.

Prefacing the report of prosecutions for violations of medical and similar laws which have been brought by our Board of Registration since Sept. 1, 1915, we shall submit a letter from the Board's Secretary which gives a *resumé* of the Board's policies and work.

Detroit, Mich., July 21, 1916.

Dr. Arthur M. Hume,
Owosso, Mich.

Dear Doctor Hume:

I am enclosing you the several items of prosecutions attempted and convictions had since the 1915 report. You will note that some of these are continued cases. In two instances, W. and W. of Grand Rapids, the indictments against them in Police Court were dismissed on technicalities, and fresh informations had to be sworn to.

I have received reports from fifty Prosecuting Attorneys out of some eighty. It is generally reported by the Prosecutors that there is a very great improvement covering medical violations, and some of them comment upon this fact. The licensed advertising traveling doctors have been greatly reduced in number, if not entirely eliminated, and we have received no complaints concerning their activities since last September. The most flagrant of this class of practitioners, who invariably advertise immorally, are the so-called "United Doctors," whose headquarters are maintained, with considerable of an organization, at Milwaukee, Wisconsin. Since last October complaints have been sworn to against several of these quacks, with the result that the majority of them have left the state with warrants still pending against them. One case was dismissed upon promise to keep out of Michigan in the future, and one case has been sent to the Circuit Court, Genesee County, for trial next September.

Since the limited registration of drugless healers of which only a small percentage of those applying were accepted by the board, the remainder, with very few exceptions, have either given up practice or removed from the state. It is now generally accepted by the several cults and so-called cult colleges in the various states, that Michigan affords very poor prospects for their activities, whereas prior to the passage of the 1913 Act hundreds of these drugless healers were coming into the state yearly. In a comparison between the registration of cults in Michigan and the registration of cults in Ohio, the following amounts of fees received are expressive. Michigan collected from the various cults less than $700 registration fees, while Ohio collected over $40,000, and in her act mentions no less than some twenty-two different varieties of healers. The Michigan act does not recognize any specific cult. A cult is a cult, with no distinction. Last year the constitutionality of the Act was questioned by a chiropractor residing in Belding, Michigan. This case went to the Supreme Court, and a year ago this month, the Act, from all its various angles, was upheld by the Supreme Court

decision handed down. The amendments to the Medical Act, including the Act itself, in consequence rests upon a pretty sure foundation.

There has been the usual difficulty experienced in getting certain Prosecuting Attorneys to act upon informations. The favorite method of defense is postponement from time to time. Here in Wayne County it is almost impossible to get the Prosecuting Attorney's office to prosecute actively and efficiently. Case after case has been reported, with very little or no action on the part of the Prosecuting Attorney. You will note that there is a marked decrease of violations of the local option laws in dry counties.

In conclusion, I think your committee and the profession in Michigan are to be congratulated upon the fact that this state has, without question, the most effective Medical Act in the United States. This does not especially refer to the prosecution sections, but to the Act as a whole.

Do you wish a further report upon any of the various activities of the board during the past year? There is just one item that I think of at this time, which seems to me to be interesting from the national standpoint, although it may not be germane to the subject of enforcement, and that is, the Michigan influence in the Federation of State Medical Boards. There are only two permanent committees in the Federation, that of the committee on standards of preliminary and medical education, and the committee on standardization and the recognition of colleges, the chairman of both committees representing the Michigan Board. This was not accidental, for when at the meeting of the A.M.A. here in Detroit I took the matter up with the Secretary and suggested that Pennsylvania should hold down the chairmanship of the latter committee, as Michigan was already represented as chairman of the former committee, I was informed that the matter has been well considered, and my suggestion was turned down.

With kind regards,
Very sincerely yours,
B. D. Harison, Secretary.

Of course we still have a plenty of illegal practitioners in Michigan but they are not only becoming beautifully less each year, but also are not so bold. The "Newspaper Quack" is becoming unknown.

LIST OF PROSECUTIONS FOR VIOLATIONS OF MEDICAL AND OTHER MICHIGAN STATE LAWS, SINCE SEPTEMBER 1, 1915.

Bay County—

Case reported by Prosecuting Attorney (name not given), practising medicine without a license—pending.

Chippewa County—

The Home Treatment and Remedy Co., Sault Ste. Marie.—This company was incorporated to sell treatments for diseases of women, and, in this connection, got out a 20-page pamphlet, in which the various symptoms of these diseases were not only described, but illustrated. Upon complaint to the Prosecuting Attorney, the printing establishment which was about printing them, having the form set up, refused to go on with the contract. This pamphlet has since been gotten out in a modified form and is being issued under cover, by the employment of women agents. It is only a question of time before a complaint will be made against one of these agents, under Act No. 62, of 1911, otherwise known as the Arnold Act, having in view the prevention of immoral advertising. This Act has been very effectively putting out of business the usual medical advertising quack. Active prosecution of this firm is contemplated this summer.

Genesee County—Flint—

Complaint was made against four registered physicians and warrants sworn out against two, and for advertising immorally under the Medical and Arnold Acts. One left the state before the warrant was served, and the other two men also left the state prior to warrants being issued. The fourth was recently committed to the Recorder's Court for trial next September. The "clean up" in Flint has been very effective.

Ionia County—

Doctor of Lyons arrested for violation of the local option law. Case pending.

D. A. H.—Warrant issued for practising medicine without a license. He left town before warrant was served. At present is in trouble with the Illinois authorities, claiming to them that that he is a registered Chiropractor of Michigan. He applied under the drugless healing clause of the 1913 Medical Act, but was refused the limited license provided for in the act. Graduate of "The American College of Mechano-Therapy," Chicago, a purely *correspondence* institution.

"Dr." V., giving his residence as Grand Rapids, was arrested for practising medicine without a license.. Case in Circuit Court. It is understood that he will plead guilty.

J. J. H., Chiropractor, Belding, Mich., whose case in the Supreme Court was decided against him, has left the county.

A. B. S., residence Smyrna, Mich., convicted of immoral advertising.. Certificate of registration, or license, canceled October, 1915.

Kalamazoo County—

B. E. M., registered physician, late of Crystal Falls, Mich. Traveling United Doctor. Very active in all counties in Michigan during the past few years. Arrested in Kalamazoo December, 1915, charged with violation of section 3, subdivision 6, clauses (d) and (g), of the 1913 Medical Act, viz.

(d)—"All advertising of medical business in "which grossly improbable statements are "made, or where specific mention is made in "such advertisements of venereal diseases "or disease of the genito-urinary organs."

(g)—"All advertising of any matter of an ob- "scene or offensive nature derogatory to "good morals or contrary to Act number "Sixty-two of the Public Acts of 1911." (Arnold Act).

Attempted defense in Police Court and was committed for trial to the Kalamazoo County Court. Prior to trial, notwithstanding a strenuous protest from the Secretary of the Board, backed by Dr. A. H. Rockwell, Councillor for the District, and the Kalamazoo Academy of Medicine, the Prosecuting Attorney, F. F. Ford, nolle prossed the case owing

to "want of sufficient evidence." The defendant advertised as a "bloodless surgeon" and held himself out as able to cure appendicitis, gall stones, tumors, goitres, etc., without operation or hypodermic injection, and by doing away with the knife, with blood, and with all pain. It is assumed that there were enough qualified surgeons in Kalamazoo to have furnished evidence covering "grossly improbable statements" involved in the advertisement.

There are several drugless healers practising in Kalamazoo whom the Prosecuting Attorney has very considerately asked to cease their violations of the law. Whether they have complied with his request has not as yet been determined.

Kent County—Grand Rapids—

O. J. L., Chiropractor. Convicted January, 1916, of practising medicine without a license. Fined $50.

D. B. C., Neuropath. Charged with practising medicine without a license. Case pending.

J. A. W., Neuropath. Charged with practising medicine without a license. Upon evidence that he questioned a patient involving health and advised bath and massage, was convicted January, 1916. Appeal pending in Supreme Court, upon the validity of form of indictment.

S. C. T., registered "Traveling Doctor." Charged with unprofessional and immoral advertising, as follows:

"GOOD NEWS FOR MEN.

"Are You a Nervous Wreck?

"Dr. ——, 316 Monroe Avenue, N. W., Grand "Rapids, Mich., U. S. A. Specialist for the cure "of Catarrh of Nose, Lungs and Appendix, "Throat, Ulcers in Throat, Nerve, Kidney, Blad- "der, Urinary Diseases, etc. Are you awful "weak? Trembly? Have you Asthma? Raise "Water, Yellow or Brown Phlegm? Sleepy Day "Times? "Have you Paralysis or Threatened "Paralysis? Memory Poor? Low Spirits?

"Dr. ——'s vast experience in the Americas, "England, France, China and Japan gives him "unbounded success as he proves to all who "call at his office.

"Office hours, 8 a. m. to 8 p. m.

"Asthma cured in East Lansing, Mich.

"Mrs. Geo. Hanchet says: 'My husband had "Asthma many years; 8 months not able to "work. He made such a squeaking noise with "his lungs, it made me terribly nervous. I was "afraid he would die before morning. Under "Dr. ——'s treatment he got entirely well in "16 days. He does not even wheeze any more.'

"Cured in 1907 and has had no sign of Asthma "since.—Adv."

Convicted January, 1916.

Monroe County—

J. E. H., charged with practising medicine without a license March, 1916. Upon ceasing practice complaint was withdrawn and the case dismissed by order of the Prosecutor, upon payment of the costs.

Manistique County—Manistique—

J. R. F. Paroled from Ionia State Prison. Third conviction on charge of disorderly conduct. Violation of present parole. License cancelled June, 1916.

Oakland County—

A. B. S., convicted of immoral advertising. Certificate or license canceled October, 1915, on former conviction at Ionia.

Saginaw County—

J. A. T., general medical confidence man, who claimed graduation from a high-grade medical college, but unable to produce any evidence. Convicted of practising medicine without a license, 1916. Had established a well-equipped office in Saginaw. Has left state.

Shiawassee County—

G. B., registered physician, Owosso. Convicted December 18, 1915, of violation of local option law. Case pending before board.

Wayne County—

J. N., Detroit, Drug Clerk. Charged 1916 with practising medicine without a license. Case pending in Recorder's Court.

V. M., Detroit. Unlicensed physician, whose certificate of registration was canceled by board June, 1915. Convicted April, 1915, of fraud and perjury in connection with obtaining a Michigan license. Appeal to Supreme Court still pending. Two recent cases on charge of practising medicine without a license. Both cases pending before Recorder's Court.

Several complaints in Prosecuting Attorney's office upon which action has not yet been taken. Prosecuting Attorney's office very conservative in handling medical cases.

All of which is respectfully submitted.

Arthur M. Hume.
Beverley D. Harison.
H. D. Bartholomew.

Committee on Legislation and Public Policy.

Report of Committee on Public Health Education. (No Report).

Report of Committee on Civic and Industrial Relation by Dr. Peterson was read as follows:

REPORT OF COMMITTEE ON CIVIC AND INDUSTRIAL RELATION.

To the President and members of the House of Delegates of the Michigan State Medical Society.

Your Committee on Civic and Industrial Relation begs to submit the following report:

In accordance with the action of the House of Delegates at the last meeting of the State Society your new permanent Committee on Civic and Industrial Relationship was directed "to study, gather facts and become intimately acquainted with all and every movement wherever and by whosoever agitated, proposed or attempted to enact or be enacted that has as its secret or avowed object the providing of social, commercial or industrial medical insurance for the public civic or commercial employee or persons; or for the providing of medical care to a group or groups of individuals singly or collectively."

Your Committee has found nothing to investigate

along the lines mentioned. Possibly, it has not fully grasped the purpose underlying the formation of the Committee. Be that as it may, your Committee would suggest that the Committee to be appointed at the next annual meeting be more fully instructed as to what it is supposed to do.

At the last meeting of the Society it was voted that no special committee on cancer be appointed but that the duties that would fall to such a committee be assumed by the Committee on Industrial and Civic Relationship. Your Committee has not attempted to organize the state in a fight against cancer for two reasons: First, it seemed best to defer action until after the Detroit Meeting of the American Medical Association; second, the American Society for the Control of Cancer with which this Committee was supposed to co-operate, had not perfected its plan for popular lectures by many speakers throughout the country. Your Committee thought it best to defer action until, as now, outlines of lectures on cancer together with lantern slides for lay audiences could be placed at the disposal of speakers in every county of the state.

With 80,000 deaths yearly from cancer in the United States it behooves the medical profession of our state to join in the fight against cancer. Your Committee would suggest that the members of this permanent committee be authorized to co-operate with the American Society for the Control of Cancer, so that a permanent set of lantern slides for popular lectures on cancer be secured for the use of the medical profession of the state. Only by concerted action on our part can the people of Michigan be taught the true facts about cancer.

W. R. Parker, Detroit.
J. W. Vaughan, Detroit.
L. S. Ramsdell, Manistee.
J. G. Manwaring, Flint.
A. P. Biddle, Detroit.
P. D. Bourland, Lake Linden.
C. B. Stockwell, Port Huron.
W. K. West, Painesdale.
A. Verne Wenger, Grand Rapids.
Reuben Peterson, Chairman, Ann Arbor.

The following Committee on "Nominations" was nominated:

I. L. Spaulding, Hudson, Lenawee County.
C. F. Moll, Kenton, Marquette-Alger County.
W. J. Wilson, Detroit, Wayne County.
D. A. Camerson, Alpena, Alpena County.
J. L. Chester, Emmett, St. Clair County.

Moved by Dr. Walker of Wayne supported by Dr. Mersen of Ottawa that the Secretary cast a ballot for these nominations. Carried.

The Secretary did so cast.

The following Business Committee was appointed by President Hornbogen:

J. D. Brook, Kent County.
W. J. Gustin, Bay County.
L. J. Hirschman, Wayne County.
J. J. Mersen, Ottawa County.
D. J. O'Brien, Lapeer.

The following telegram was received by President Hornbogen and read:

August 11, 1916.

"Dr. J. B. Murphy of Chicago died suddenly here at the Grand Hotel this afternoon."

(Signed) Dr. F. J. W. Maquire.

Dr. McMillan of Wayne: Dr. J. B. Murphy was a great man of the medical world and the greatest teacher of surgery at the present time; a man whose name was known all over the world for his successful work in surgery and especially for his wonderful teaching. I therefore move that a Committee be appointed to express in suitable terms the very high appreciation of this man's work in our field.

Supported by Dr. Brook of Kent. Carried.

In compliance with the motion the President appointed the following Committee.

Dr. McMillan, Detroit.
Dr. R. Peterson, Ann Arbor.
Dr. Walker, Wayne.

RESOLUTION.

With sorrow and regret the Members of the Michigan State Medical Society learn of the death of Dr. J. B. Murphy. By his many and valuable contributions to the science and art of Surgery, and by his practical and impressive methods of teaching he attained an eminent place among the surgeons of the world.

Whether in the rude and remote hamlet or in the modern perfected hospital, whether along life's peaceful ways or on the far-flung battlefields, the surgeon plys his art with greater skill and efficiency since J. B. Murphy lived and worked among us. He made his offering of a life's devotion at the Shrine of Hygiea and in response healing and relief has flowed generously from her finger-tips.

To few men in the medical profession or other vocations in this age has it been given to render so great a service to his fellowmen.

To the members of this Society Dr. Murphy's death comes as a great loss. His was a familiar figure at our State meetings and at our various clinics and his presence never failed to draw many enthusiastic and eager listeners.

Therefore the House of Delegates of the Michigan State Medical Society in session at Houghton, Michigan has resolved and ordered that this appreciation of Dr. J. B. Murphy be entered among its records and that the sympathy and condolence of its members along with a copy of this resolution be conveyed to his widow and family.

Sincerely,

J. A. McMillan, M.D., F.A.C.S.
Chairman of Committee.
Frank B. Walker, M.D., F.A.C.S.
Reuben Peterson, M.D., F.A.C.S.

FEE SCHEDULE.

Dr. Hirschman of Wayne.

Two or three years ago a Fee Bill was submitted to the Society and it was defeated. I

am informed that every once in a while when a bill is rendered for services to Corporations that the question of this Fee Bill comes up, stating that such and such a fee is allowed by the State Society for certain specified services. Many Insurance Companies are taking advantage of this. Our members should be informed that there is no such Fee Bill and such action on the part of the Insurance Company is wrong and a misrepresentation. I move you, Mr. President, that the Secretary be instructed to send a registered letter notifying the Insurance Companies to this effect and that this action be announced in the editorial columns of *The Journal.*

Supported by Dr. Moll of Kenton. Carried.

On motion the House of Delegates adjourned to meet at 8:30 a. m., August 16, 1916.

SECOND SESSION OF THE HOUSE OF DELEGATES.

The Second Session of the House of Delegates was called to order in the Houghton Club on August 16, at 8:30 a. m., President Hornbogen presiding and the following delegates responding to roll call:

(Same as first roll call).

The minutes of the previous meeting were read.. It was moved and supported that the minutes of the previous meeting be adopted as read. Carried.

The following report was read by Dr. V. C. Vaughan, Chairman of the Tuberculosis Committee:

REPORT OF COMMITTEE ON TUBERCULOSIS.

Mr. President and Members of the House of Delegates:

Your Committee on Tuberculosis submits the following report:

During the past year Michigan has taken an advanced stand in connection with the fight against Tuberculosis. The survey now being conducted under the direction of the State Board of Health, is in our opinion of the greatest practical importance, in our attempt to eradicate this disease. Every intelligent physician realizes that satisfactory results can be obtained only by hearty co-operation between all citizens, be they physicians or laymen, and it is this co-operation which is being procured through the work of the State Survey. The principle value of the work has been first, the education of the public with regard to the character of the disease, and the necessity of periodic examinations; second, the discovery of infected individuals and the education of these individuals with regard to means necessary for their own betterment, and for the prevention of the spread of infection to others; third, the demonstration to various counties of the need of local sanitoria for the care of infected individuals within their jurisdiction.

Your committee again wishes to emphasize the fact that it thoroughly believes in the value of local sanitoria, either city or county. These institutions should be so constructed as to care for all stages of the disease on the same ground. The Sanitorium should be a hospital for advanced cases and a training school for the moderately advanced and early cases. It should be easy of access to the family physician, who should have the opportunity of becoming familiar with the conduct of the institution.

Believing that the best method of demonstrating the value of the periodic examination is the practical one, your committee decided to hold another Tuberculosis Day, on Aug. 10th. On this day it was hoped that every member of the State Society would insofar as possible hold himself in readiness to examine wihtout recompense any individual for the present or absence of tuberculous disease. Gov. Ferris, who has always taken an advanced stand with regard to matters of public health, issued a proclamation, setting aside Aug. 10, 1916, and requesting the public to make use of the advantages offered on that day.

As a result of the work we have a report on four hundred and forty-two individuals examined throughout the state. Of this number one hundred and thirty-two were diagnosed as positive cases, ninety as suspicious, and two hundred and twenty as negative. Eighty-four individuals gave a history of pleurisy, at sometime previous to the examination, and of this number sixty-two were stated to be at present tuberculous.

Interesting statistics concerning the value of the opthalmo reaction were also obtained, thus, we have a series of one hundred and fifty-five opthalmo reactions tried. Among thirty-six individuals who gave a history of pleurisy and in whom the test was tried, twenty gave a positive reaction, while of twenty-one individuals who gave a history of pulmonary hemorrhage, fifteen or seventy-six and two-tenths per cent., responded with a positive test. Of sixty-six individuals who gave a positive opthalmo reaction, forty-nine showed either elevation of the pulse above one hundred, or elevation of the temperature above 99.4 or both, while only seventeen failed to show either of these indications of activity. We infer from these results that the opthalmo reaction is of value in diagnosis and is not open to the criticism of being hyper sensitive. Your committee wish again to thank the members of the Society for the hearty co-operation which they have shown with regard to the Tuberculosis Day Examination. We feel that this is a step toward the medicine of the future, viz: preventive medicine, and we are glad that the Michigan physicians have taken the lead in this matter.

Respectfully submitted,

TUBERCULOSIS COMMITTEE,
V. C. Vaughan, Jr., Chairman.

Dr.. Brook of Wayne made a motion that a Committee on Judicial Action be appointed. It is the purpose to relieve the House of Delegates' Business Committee of Legislative prob-

lems as they are of such a character that some very important questions are neglected and to obviate this the Committee on Judicial Action be given this duty, the Committee to be appointed by the President. Seconded by Dr. Mersen, Ottawa. Carried.

It was moved and seconded that the House of Delegates adjourn to meet at 8:00 a. m., August 17, 1916. Carried.

THIRD SESSION.

The third session of the House of Delegates was called to order at the Houghton Club, Houghton, at 8:30 a. m., August 17, 1916 by President Hornbogen with the following delegates present:

(Same as first roll call).

The report of the Business Committee was read by Dr. Brook of Kent as follows:

To the House of Delegates of the M.S.M.S.

Gentlemen:

Your Business Committee is pleased to report as follows:

1st. That the reports of the various standing committees be approved and adopted.

2nd. That the report of the Council be adopted with the following exceptions:

(a) Tuberculosis Survey:

Inasmuch as Dr. DeKleine is to read a paper and make report of the work thus far accomplished at this meeting of the Society, and because of the Resolutions adopted at the Grand Rapids meeting last year and in view of the fact that criticisms of the work at this time would be decidedly detrimental to the cause, we therefore recommend that this paragraph of the Council report be stricken out.

All of which is respectfully submitted.

L. J. Hirschman.
J. J. Mersen.
D. J. O'Brien.
W. J. Gustin.
J. D. Brook, Chairman.

The report of the Business Committee was adopted on motion of Dr. Hirschman of Wayne.

The report of the Nominating Committee was read by Dr. Spaulding as follows:

For President for 1916-17—Dr. Andrew P. Biddle, of Wayne.

First Vice President—Dr. G. J. Turner, Houghton.

Second Vice President—Dr. J. Mersen, Holland.

Third Vice President—Dr. A. E. Hart, St. Johns.

Fourth Vice President—Dr. G. S. Ney, Port Huron

Delegate to A.M.A.—Dr. Guy Connor, of Wayne; Dr. J. G. Brook, of Grandville.

Alternate Delegates to A.M.A.—Dr. C. F. Moll, Kenton; Dr. Chas. Kuhn, Wayne.

Regarding the place of meeting for 1917 we are sorry to say that this Committee has not received any invitations and we therefore recommend that it be left to the Council to decide upon the meeting place for 1917.

Signed,

I. L. Spaulding, Hudson.
C. F. Moll, Kenton.
W. J. Wilson, Detroit.
D. A. Cameron, Alpena.
J. L. Chester, Emmett.

Moved by Dr. L. J. Hirschman of Wayne that the report of the Nominating Committee be adopted as read. Supported by Dr. Chapman of Muskegon. Carried.

It was moved and seconded that the Secretary cast the ballot for the election of First, Second, Third and Fourth Vice-Presidents as nominated by the Nominating Committee. The Secretary did so cast and the President declared the nominees elected to their respective offices.

It was moved and seconded that the Secretary cast the ballot for the delegates and alternates to the American Association. The Secretary did so cast and the nominees were duly declared elected.

AMENDMENTS TO THE CONSTITUTION.

Moved by Dr. Brooks of Wayne, seconded by Dr. Spaulding of Lenawee that we adopt the amendment to the Constitution and By-Laws as follows: Carried.

1.

Chap. 9, Section 10. The Medico-Legal Committee shall undertake the defense of any members of the Society sued or threatened with suit for civil malpractice through all state and Federal Courts operating in Michigan, regardless of the time when the alleged cause for action arose, and shall also defend any action for civil malpractice against the estate of a deceased member, provided he or she, while living, has conformed to the foregoing requirements.

2.

Chap. 9, Section 13. All attorney's fees and costs will be paid from the Medico-Legal Fund and defense carried through all Federal and State Courts operating in Michigan, but under no circumstances shall this fund be liable for any damages declared against an unsuccessful litigant. (As adopted Sept. 16, 1909.)

Moved by Dr. J. J. Mersen of Holland, supported by Dr. D. J. O'Brien of Lapeer, that this change in the Constitution be adopted. Carried.

3.

Chap. 11, Section 1. The annual assessment shall be three and one-half dollars for dues and subscription to the *Journal*. The Secretary of each Society shall forward its assessment with a roster of all officers and members to the Secretary of this So-

ciety immediately after the annual meeting of the County Society.

Dr. Peterson of Washtenaw moved the adoption of this amendment.

Seconded by Dr. Spaulding, Lenawee. Carried.

HONORARY MEMBERS.

It was moved by Dr. Peterson of Washtenaw, supported by Dr. Spaulding of Lenawee that the following members be elected as resident honorary members:

W. A. Whitney, Big Rapids.
G. W. Jones, Imlay City.
Wm. Blake, Lapeer.

with the following nonresident honorary member:

I. N. Albee, New York, N. Y.

Moved by Dr. Brook supported by Dr. Chapman that the meeting adjourn. There being no further business the meeting adjourned *sine die*.

H. W. Hornbogen, President.
F. C. Warnshuis, Secretary.

ENTERTAINMENT.

The Entertainment Features were as follows:

Tuesday Evening, August 15, 1916—The ladies were entertained at Kerredge Theatre—"Ramona" at Hancock.

9 P. M. Smoker and Buffet Lunch at the Amphidrome, Houghton.

Wednesday Afternoon, August 16, 1916—Automobile rides:

(a) South Range points.
(b) Lake Linden and Calumet.
(c) Calumet and Keweenaw County..

Wednesday Evening, August 16, 1916—8:30 President's Reception and Ball, Calumet Light Guard Armory.

Special Train to Calumet over Mineral Range R. R. leaving Houghton at 7:30 p. m.

Thursday Morning, August 17, 1916—The visiting ladies were taken in charge by the Ladies Committee for a drive about the country, followed by basket lunch at Onigaming Yacht Club.

Thursday, August 17, 1916 at 4 P. M.—Concert by the Calumet and Hecla Band at Houghton.

REGISTRATION.

Out of town doctors were as follows:
W. J. Stern, Cleveland, Ohio.
O. B. Lambert, Algoma, Wis.
W. H. Matchett, Greenville, Ohio.
Geo. B. Parisen, Toledo, Ohio.
Wm. Whitford, Chicago, Ill.
H. W. Loeb, St. Louis, Mo.

Allegan.—A. H. Wicks.

Alpena.—D. A. Cameron.

Baraga.—R. S. Buckland, W. A. Von Zellen.

Bay.—Thos. A. Baird, C. C. Baker, J. C. Grosjean, J. W. Gustin.

Benzonia.—E. J. C. Ellis.

Berrien.—N. A. Herring.

Calhoun.—Jas. T. Case, W. L. Godfrey, J. H. Kellogg, A. E. MacGregor, M. A. Mortensen, J. S. Pritchard, R. C. Stone.

Chippewa.—R. Bennie, R. C. Winslow.

Clinton.—A. O. Hart.

Delta.—A. J. Carlson, M. P. Fenlon, A. H. Miller, J. J. Walch.

Eaton.—F. J. Knight,

Emmett.—John Reycraft, F. C. Witter.

Genesee.—C. B. Burr, H. Cook, H. E. Randall, J. F. Rumer.

Grand Traverse-Leelanau.—E. P. Lawton.

Gratiot.—C. B. Gardner, O. Reichard.

Hillsdale.—W. H. Sawyer.

Houghton.—J. C. Abrams, A. D. Aldrich, E. T. Abrams, H. L. Baer, P. D. Bourland, J. H. Cox, G. A. Conrad, J. H. Charters, L. M. Power, H. D. Cornell, W. H. Dodge, A. F. Fischer, Chas. A. Groomes, W. T. S. Gregg, D. E. Goodwin, H. L. Gregory, E. V. Henry, C. B. Harkness, J. T. Holmes, R. W. Hodges, Henry M. Joy, E. E. Koelbe, J. R. W. Kirton, A. I. Lawbaugh, Simon Levin, Alfred LaBine, J. D. McKinnon, D. K. MacQueen, John MacRae, R. J. Maas, J. W. Moore, Carl F. Moll, V. L. Oler, G. W. Orr, A. R. Pearce, J. Rheries, C. H. Rupprecht, A. C. Roche, Chas. E. Rowe, M. D. Roberts, H. R. Sharpe, R. M. Schulte, I. D. Stern, W. P. Scott, A. R. Simonson, J. E. Scallon, J. G. Turner, J. B. Quick, Jacob Talso, D. D. Todd, W. K. West, P. H. Wilson, A. B. Wright.

Ionia.—Nelson McLaughlin.

Isabella-Clare.—J. M. Croman.

Ingham.—H. S. Bartholomew, Wm. DeKleine, A. A. Spoor.

Jackson.—C. G. Parnall.

Kalamazoo Academy.—C. E. Boys, L. H. S. DeWitt, C. B. Fulkerson, B. A. Shepard.

Keweenaw.—N. S. MacDonald, L. A. Perkins, N. T. Paull, A. R. Tucker.

Kent.—A. J. Baker, J. D. Brook, A. M. Campbell, W. J. DuBois, F. C. Kinsey, A. Noordewier, R. R. Smith, H. J. VandenBerg, F. C. Warnshuis.

Livingston.—J. A. McGarvah.

Luce.—F. P. Bohn, E. H. Campbell.

Lenawee.—F. J. McCue, R. H. Nelson, I. L. Spaulding.

Lapeer.—W. J. Kay, D. J. O'Brien, Peter Stewart, S. O. Thomas.

Marquette.—Geo. M. Belhumeur, R. A. Burke, Chas. L. Finch, T. A. Felch, E. H. Flynn, L. W. Howe, Henry Holm, A. W. Hornbogen, F. M. Harkin, H. J. Hornbogen, C. J. Larson, W. B. Lunn, D. R. MacIntyre, H. H. Ptolemy, I. Sicotte, T. W. Scholtes, John O. Von Zellen.

Menominee.—W. R. Hicks, H. T. Sethney, D. R. Landsborough, R. A. Walker.

Mecosta.—*W. T. Dodge.*

Monroe.—C. T. Southworth.

Muskegon.—V. A. Chapman, G. J. Hartman, Geo. L. LeFevre, G. S. Williams.

Montcalm.—A. S. Barr, F. A. Johnson.

Oakland.—A. B. Corbit.

Ontonagon.—J. S. Nitterauer, F. W. McHugh, E. J. Evans, E. A. Florentine, A. L. Swinton, Earl A. Linger.

Ottawa—J. J. Mersen.

Osceola.—Donald Johnson.

Shiawassee.—A. M. Hume, J. A. Rowley.

St. Clair.—A. L. Callery, J. L. Chester, T. F. Heavenrich, Alex J. MacKenzie, Geo. E. New, C. B. Stockwell.

Tuscola.—T. W. Hammond, A. L. Seeley.

Washtenaw.—Reuben Peterson, V. C. Vaughan.

Wayne—J. H. Andries, R. C. Andries, C. D. Brooks, W. E. Blodgett, H. L. Begle, A. W. Blain, A. P. Biddle, W. D. Barrett, G. L. Connor, D. M. Campbell, J. H. Carstens, G. E. Frothingham, H. A. Hagerty, H. W. Hewitt, L. J. Hirschmann, B. D. Harison, R. K. Johnson, Guy L. Kiefer, C. F. Kuhn, R. E. Loucks, J. T. Lyston, A. T. Laberge, A. W. Lescohier, A. D. McAlpine, G. E. McKean, J. A. MacMillan, R. E. Mercer, Carl F. Muenz, C. H. Oakman, G. C. Penberthy, H. M. Rich, W. T. Shannon, B. R. Shurley, L. C. Thomas, F. B. Tibbals, V. C. Vaughan, F. B. Walker, W. J. Wilson.

Wexford.—J. F. Gruber, B. H. McMullen.

BAKING POWDER

The doctor frequently has occasion to prescribe a diet for his patient, and under such circumstances is interested in the healthfulness and action of every ingredient of the food. Probably no ingredient is more influential in the production of appetizing and nutritious foods than is baking powder and at the same time, there is no ingredient over which there has waged such fierce trade controversies as to healthfulness and efficiency.

So much has been written about adulterations, substitutions, misbranding, etc., that people are easily alarmed, and very often intimidated and misled by unscrupulous manufacturers who have taken advantake of the situation for their own benefit and their competitors' injury. For example, certain baking powder interests have been active in the publication of information suggesting injurious effects of alum in baking powders. As in many other cases, however, the theory upon which this idea is based has no foundation in fact.

The question whether alum used in this way is injurious has been settled by the investigation of the Referee Board of Scientific Experts headed by Dr. Ira Remsen, President of Johns Hopkins University. The distinguished character and personnel of the Board lends additional weight to its conclusion that: "Aluminum compounds when used in the form of baking powders in foods have not been found to affect injuriously the nutritive value of such foods."

In short, the Board concludes "that alum baking powders are no more harmful than any other baking powders."

In like manner certain baking powder manufacturers have attempted to create prejudice against the white of egg, which is used in some baking powders and serves several valuable purposes. On the face of it, this is ridiculous because everybody knows that the white of egg, whether in baking powder or anything else is absolutely pure and wholesome. Its use in baking powder permits both the dealer and the housewife to test their powder at all times to determine whether it is of standard strength. It is also used by the salesmen of the companies employing this ingredient, to keep the powder fresh on the retailer's shelves, thus protecting not only the retailer, but the housewife, as well, from baking failures.

After a careful investigation, we are thoroughly satisfied that both alum and white of egg in baking powder serve valuable purposes, and that baking powder containing these ingredients should be favored and recommended, and that unscrupulous manufacturers attacking these ingredients for commercial gain alone should not be deemed worthy of the patronage of the members of various medical associations.

The medical profession everywhere is concerned in the welfare of the public, and will welcome the discontinuance of misleading advertisements that have so long attempted to create the belief that so-called alum or white of egg in baking powder is anything but pure and wholesome.

The Journal
OF THE
Michigan State Medical Society
ISSUED MONTHLY UNDER THE DIRECTION OF THE COUNCIL

Arthur M. Hume, Chairman Owosso.
Guy L. Kiefer Detroit.
W. J. Kay Lapeer.
W. J. DuBois Grand Rapids.

EDITOR
FREDERICK C. WARNSHUIS, M.D., F.A.C.S.
Grand Rapids, Mich.

All communications relative to exchanges, books for review, manuscripts, news, advertising, and subscriptions are to be addressed to Frederick C. Warnshuis, M. D., 91 Monroe Ave., Grand Rapids, Mich.

The Society does not hold itself responsible for opinions expressed in original papers, discussions, communications, or advertisements.

Subscription Price—$3.50 per year, in advance.

September.

Editorials

ANDREW PORTER BIDDLE, PRESIDENT 1916-1917.

By unanimous vote and unapposed, Dr. Andrew Porter Biddle of Detroit was elected President of the Michigan State Medical Society for the official society year of 1916-1917.

Andrew Porter Biddle was born in Detroit February 25, 1862. His preliminary education was obtained in Geneva, Switzerland, 1872-75; at Heidelberg, Germany, 1875-77; Detroit High School 1877-1880; Naval Cadet, U. S. Naval Academy, Annapolis, Md.., 1880-83; Detroit College of Medicine 1883-1886.

Dr. Biddle served as interne in Harper Hospital 1885-86. He held the position as U. S. Pension Examining Surgeon from 1893-1897. He served as Major and Surgeon with the Thirty-first Michigan Volunteers Infantry during the War with Spain in 1898. He has been a member of the Michigan State Board of Health since 1913.

Dr. Biddle served as Secretary of our State Society from 1900 to 1906. He was Editor of *The Journal* from 1902 to 1906. He was a member of the Council, representing the First Councillor District, from 1909 to 1915.

At present Dr. Biddle is Professor of Dermatology in the Detroit College of Medicine and Surgery; is Consulting Dermatologist to the Detroit Board of Health; Dermatologist to St.. Mary's, Woman's, Children's Hospitals and Protestant Orphan Asylum. He is a fellow of the American Medical Association, Detroit Academy of Medicine, the Chicago Dermatological Society and the American Dermatology Society.

Such is a tabulation of the progressive stages of the doctor's life and reveals the success that his efforts have wrought and which measure up to the man who we have honored ourselves by electing to the Presidency of our Society. It becomes self apparent to the reader that to no more representative member could we accord the office of President. In doing so we, as a Society, are unable to repay Dr. Biddle for the time and energy he has expended in behalf of organized medicine in Michigan. For twenty-five years he has not failed to attend an Annual Meeting and his Society activities stand out in the records of our organization. Secretary, the organizer and first Editor of *The Journal*, Councillor and now President of our State Society—who gainsays that we have done but little enough to recognize, by now electing to the highest office in our power to confer, a man to whom Michigan's Organized Profession owes so much.

Dr. Biddle, in accepting the office responded:

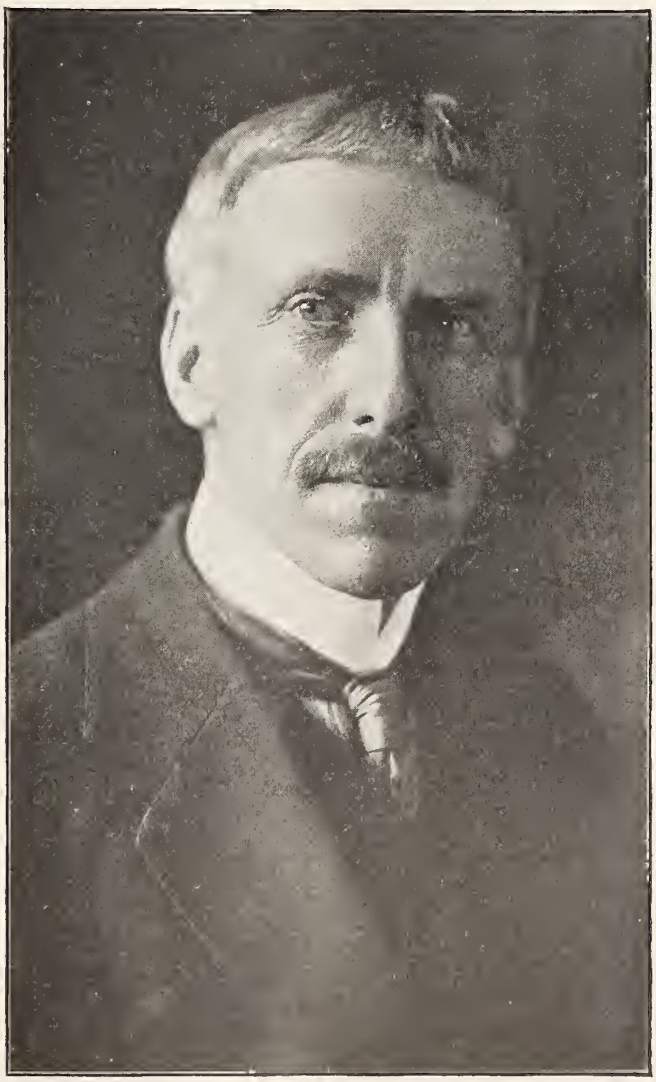
"The love I have for you shall reflect back into me and I will thus be stimulated to do good work next year. Gentlemen, I accept with gratitude and pleasure, this honor." With such a pronouncement little more need be said. We are firm in the assurance that his term of office will reflect executive presidential activities that will redound to the honor of the Society, the benefit of its members and will enable us to record our increased pride in President Biddle. We would we were able to pay proper tribute to Dr. Biddle. To do so adequately is beyond us.

THE HOUGHTON MEETING.

Houghton, Calumet, Hancock have been associated in the minds of many members as villages located in the extreme northern part of the Upper Peninsula. Co-incident there has accompanied the thought of bitter, cold winters, deep snows, a few months of cool summers, mining camps and a large foreign population. Isolated somewhat geographically we permitted ourselves to think of the northern part of the Upper Peninsula as isolated and unattractive in all its environments. Little did we dream that the contrary prevails.

The 215 members, many accompanied by

their wives, families and friends, who journeyed to Houghton to attend our Fifty-first Annual Meeting were confronted with a most delightful series of events that banished forever all depre-



ANDREW PORTER BIDDLE
President 1916-1917

cating and critical preconceived opinions or thoughts. On arrival they found themselves transplanted into a new surrounding that was characterized by hospitality, grandeur and beauty of scenery, wonderful, awe inspiring industries, business firms of colossal magnitude, social clubs but seldom equalled in the lower peninsula and neighboring states, hospitals possessed of modern facilities, paved and shaded streets with green lawns and beautiful homes, miles and miles of finest stone roads winding midst picturesque scenery, talented artists, civic and industrial pride, communal interests and a group of charming talented hospitable and delightful people ministered to by physicians and surgeons who are members of

our State Society and of whom we are indeed proud. All in attendance were agreed that never was the place of holding our Annual Meeting so replete, with such interesting environments or with such unassuming cordial hospitality. All were confronted with a new viewpoint and departed homeward with a unanimous expression that Houghton and vicinity had outdone all other communities where our meetings have been held. The delightful incidents encountered and the memory of the picturesque surroundings will remain unforgotten in future years. We indeed regret that not more of our members participated in these pleasurable and profitable experiences.

Turner, Bourland, Conrad, Fisher, Levine, Macdonald, McNaughton, West, composing the Executive Committee on Arrangements were omnipresent and indefatigable in their effort for the bestowing of comfort and pleasure on all their guests. They and all their Committee members left nothing undone and were ever alert to everyone's needs and comfort. They provided ample hotel and lodging accommodations for all and could have comfortably taken care of two or three hundred additional guests —(you who stayed away because of fear of lack of accommodations do not know of the Club Rooms, House Boats, Country Camps and beautiful homes that were able and willing to provide lodging for you). The Copper Country Profession acquitted itself with honor and pride and have acquired a place in the heart and friendship of every member they entertained. Grand, good fellows, everyone of them.

The House of Delegates, the Council, the General Sessions and the Scientific Sectional activities are reported in the official minutes published on another page of this issue. It is true the Section work was abbreviated and a large part of the time devoted to social features and fraternalizing. For that there can be no regret because it must be admitted that the cementing of social acquaintance, learning to know your fellow, is a spirit meriting cultivation and when acquired is a valuable society asset. Scientifically and socially the appraisal is—A most profitable meeting.

The House of Delegates enacted the following important innovations: Creating of a Committee on Judicial Action; the increasing of the annual dues from $3.00 to $3.50 per annum; amending the By-Laws so that the Medico-Legal Committee will defend only those suits of malpractice commenced in the Courts of Michigan.

President Hornbogen's annual address is contained in this issue. The masterly and scholarly address of Rev. Father Barth will be published in our next issue.

For further detailed reports we refer our members to the official proceedings.

FEE SCHEDULES.

Upon two occasions Committees have been appointed to prepare a Schedule of Fees designed to govern charges for service rendered in connection with the Michigan Compensation Law and to be approved by the State Society. These Committeees on two occasions submitted a Fee Schedule. *Both of these schedules were rejected by the House of Delegates and not adopted.* Consequently there is not in existence a Fee Schedule that is approved or recognized by the State Society or that has its sanction.

It has been brought to the attention of many that certain corporations and Insurance Companies are representing that such a schedule is in force. One Company has gone so far as to cause one of the proposed schedules to be printed and upon that printed copy is the statement that that schedule was adopted by the Michigan State Medical Society. Such representations are mis-statements and without authority. *There is no fee schedule approved by our Society.* Our members' attention is brought to this matter so that they may not be imposed upon or permit Insurance Companies to make representation.

IMPOSITION.

We have several times commented briefly upon how Insurance Companies impose upon doctors in their attempt to secure information regarding their policy holders who present claims for sickness or accident. A blank is presented to the policy holder which calls for a doctor's or surgeon's report and the policy usually stipulates that this evidence of sickness or injury must be secured by the policy holder without expense to the company. Therein lies the imposition. Possibly we would not object

very much if the information sought by the Company consisted of a statement of the disease or the extent of the injury and the period of disability. However, the company seeks the benefit of a physical examination in order that it may protect its interest and determine the advisability of continuing to carry that individual risk. The questions asked necessitate a physical examination and inquiry into the patient's previous history. The questions range from twenty to sixty in number and to fill them out requires anywhere from fifteen minutes to three-quarters of an hour. All free information, for the Company's benefit without remuneration for time spent—our patients as a rule will object to paying for this service.

Health and Accident Insurance Companies have imposed long enough and the time is at hand when the profession, individually and collectively should refuse to continue to serve as their investigators and inspectors of risks without being remunerated. We wonder how far Fire Insurance Companies would succeed if when a fire occurred in one of their risks they would write the Chief of the Fire Department and ask him to inform them of the cause, extent and loss produced by the fire and whether the structure was a safe future risk?

Fire Insurance Companies have investigators and inspectors to adjust and inspect their losses and risks. Health and Accident Insurance Companies should likewise employ inspectors and adjusters and not impose upon the doctors to secure this information gratuitously.

You doctors of Michigan—we recommend and urge that you henceforth refuse to fill out these blanks unless you are properly remunerated. We know several doctors who have done so and are now being paid a fee for supplying this information. You who are not, are being imposed upon. It rests with you individually whether you will tolerate such imposition.

COMMITTEE APPOINTMENTS.

President Biddle announces the following Committees appointed under the Constitution and By-Laws for the year 1916-1917.

EXHIBITS.

F. J. Lee, Chairman, term expires 1917, G. R.
Geo. A. Conrad, term expires 1918, Houghton

MEDICAL EDUCATION.

A. M. Barrett, Chairman Ann Arbor
Burt R. Shurley Detroit

LEGISLATION AND PUBLIC POLICY.

A. M. Hume, Chairman Owosso
B. D. Harison Detroit
H. S. Bartholomew Lansing

VENEREAL PROPHYLAXIS.

Udo J. Wile, Chairman Ann Arbor
H. W. Plaggemeyer Detroit
A. E. West Kalamazoo

TUBERCULOSIS.

V. C. Vaughan, Jr., Chairman Detroit
A. F. Fischer Hancock
H. M. Rich Detroit
J. D. Brook Grandville
A. H. Rockwell Kalamazoo
J. T. Pritchard Battle Creek
A. M. Williams Alpena

PUBLIC HEALTH EDUCATION.

John L. Burkhart, Chairman Lansing
Guy L. Kiefer Detroit
Frances Rutherford Grand Rapids
Edw. Goodwin Bay City
Carl F. Moll Kenton

COMMITTEE ON CIVIC AND INDUSTRIAL RELATION.

Frank B. Walker, Chairman.....Detroit
R. Peterson, ...Ann Arbor
W. R. Parker Detroit
L. S. Ramsdell Manistee
J. G. Manwaring Flint
W. D. Barrett Detroit
P. D. Bourland Lake Linden
C. B. Stockwell Port Huron
W. K. West Painesdale
F. C. Kinsey Grand Rapids

SECTION OFFICERS.

The following officers were elected to serve on the several sections on which vacancies occurred:

GENERAL MEDICINE.

Myron W. Clift Chairman.....Flint

SURGERY.

A. W. Blain, Chairman Detroit
J. C. Andries, Secretary Detroit

OPHTHALMOLOGY AND OTO-LARYNGOLOGY.

Geo. H. Frothingham, Chairman Detroit

GYNECOLOGY AND OBSTETRICS.

H. W. Hewitt, Chairman Detroit

Editorial Comments

We urge that every member carefully read the report and minutes of our Fifty-first Annual Meeting. The Committee Reports especially merit your thoughtful consideration.

The announcement of the death of Dr. John B. Murphy was the first intimation to many that he had been ill. It was known to many that the last year witnessed increased failing health and physical infirmity and that he was compelled to relinquish the duties of his clinic and professional activities. We are not authoritatively informed as to the exact cause of death but rumors announced aortic sclerosis complicated with renal involvement. Death occurred on August 11th at Mackinac Island where he had gone to escape the intense heat.

In the death of Dr. Murphy America's profession sustains the loss of one of the greatest diadactic and clinical teachers. A man who was a peer in the development of modern surgery and who possessed the talent of causing his work, experience and results to exercise a constructive and elevating influence on the practice of surgery in America. While universally known as the devisor of the Murphy button, still his greatest recognition rested in his ability in the surgical treatment of bone lesions and the development of a technic for the restoration of function in ankylosed joints.

Energetic, aggressive, at times courting public attention, envied by many, criticised and condemned by some, still admired and respected by all who knew him, his death, while at the height of his career, occasions the loss of a man, doctor, and surgeon whose life's activity will exercise a wholesome influence throughout America.

All the papers that have been read at past meetings and that have been sent to the Editor have been published in *The Journal*. Any member who may have read a paper at a previous meeting and which has not appeared in *The Journal* is assured that his manuscript has never been sent to the Editor.

Correspondence

August 21, 1916.

Mrs. J. B. Murphy, 2526 Calumet Ave.
Chicago, Ill.

Dear Mrs. Murphy:

The Michigan State Medical Society assembled for its Fifty-First Annual Meeting on August 15, 16 and 17, were not unmindful of the loss that has been sustained by the entire Medical and Surgical world by reason of the death of your honored and esteemed husband—Dr. John B. Murphy.

The Profession of Michigan had many reasons for indebtedness to him who had done so much for the profession in his neighboring state. Often has he honored us with his presence, inspired us with his teachings and rendered aid to us individually and collectively.

Expressive of the esteem in which he was held as an honorary member of our Society and an authority and leader in our profession I have been instructed, by a resolution introduced and passed during our Annual Meeting to convey to you the expression of sorrow and loss that the physicians of Michigan realize by reason of the death of Dr. Murphy. Also to convey to you that we are appreciative of the great loss that you have personally sustained. We would that the power were ours to assuage your grief and sorrow and that of your daughters.

We do express to you our sincerest condolences and declare that the memory of your illustrious husband will ever be cherished by us. Presenting to you our members' kindly greetings and esteem, I am,

Yours very truly,
F. C. Warnshuis, Secretary-Editor.

State News Notes

Dr. Angus McLean, Dr. C. D. Brooks, Dr. R. R. Shurley and Dr. P. M. Hickey, with Miss Emily McLaughlin as chief nurse, have been chosen as the staff for the Detroit unit, in which Harper hospital will be center of the organization of one of twenty-five mobile base hospitals, establishment of which, by the Red Cross, was announced Saturday.

The plan is to have each hospital a base to serve an army division in case of war. It is under the general direction of Colonel Jefferson R. Kean, of the United States army medical corps.

The staff of each base hospital consists of twenty-three physicians, two dental surgeons, a chaplain, fifty trained nurses, twenty volunteer nurses and fifteen civilian assistants. They will be able to accommodate about 500 patients.

The field equipment for each unit will cost about $25,000 and in many cities this has already been raised but in Detroit the plea will be made to the general public in order to make the Harper hospital a decided success as a unit.

In case of war it is announced that the regular hospital corps of the Red Cross will be located at the base of each division, and will be prepared to render the best medical and surgical attendance.

The Seventh Annual Meeting of the American Association for Study and Prevention of Infant Mortality will be held in Milwaukee, October 19-21, 1916.

The subjects to be discussed include:

Governmental activities—Federal, State and Municipal—in relation to infant welfare.

Care available for mothers and babies in rural communities.

Standards for infant welfare nursing.

Morbidity and mortality in infancy from measles and pertussis.

Public school education for the prevention of infant mortality.

Vital and Social Statistics.

Dr. S. McC. Hamill, of Philadelphia, is president of the Association, and Dr. Wm. C. Woodward, of Washington, president-elect for 1917. Dr. George C. Ruhland, Health Commissioner, Milwaukee, is chairman of the Committee on Local Arrangements.

The sessions will be under the chairmanship of the following:

Obstetrics—Dr. A. B. Emmons, 2nd, Boston.

Propaganda—Mr. George R. Bedinger, Detroit.

Pediatrics—Dr. Borden Veeder, St. Louis.

Governmental Activities and Vital and Social Statistics—Dr. Wm. C. Woodward, Washington.

Public School Education for the Prevention of Infant Mortality—Prof. Abby L. Marlatt, Madison.

Rural Communities and Nursing and Social Work—Dr. Dorothy Reed Mendenhall, Madison.

The session on Pediatrics will be a joint one with the Milwaukee County Medical Society. The session on Governmental Activities will be a joint one with the Committee on Vital and Social Statistics, and the session on Rural Communities will be a joint one with the Committee on Nursing and Social Work.

Programs or other information in regard to the meeting can be secured from the Executive Secretary, 1211 Cathedral St., Baltimore, Maryland.

In honor of the fiftieth anniversary of its founding, the Battle Creek Sanitarium will have a notable celebration on October 3, 4 and 5. The program is rich in varied features, among which are a great banquet, receptions, athletic contests, industrial pageant, outdoor spectacle, re-union of former patients, and a series of conferences on sociological, eugenic, sanitary and medical subjects in which prominent speakers from all parts of the country will take part. A considerable attendance of physicians is expected.

The beginnings of the Sanitarium were sufficiently humble. A two-story frame house on a knoll in the outskirts of an obscure village, two physicians and one patient, comprised the tangible portion of what was called the Western Health Reform Institute. But the true riches of the establishment lay in the ideas on which it was based. These included not only the "water cure" but diet reform, dress reform and other "simple life" measures for the physical welfare of man. These fifty years have seen as big a change in the methods of the Sanitarium as they have in its equipement of lands and buildings, yet those pioneers held the grain of the truth. In one sense, the present great enterprise, with its imposing display of architecture, its marvelous apparatus for accurate diagnosis and the healing of the sick, its corps of skilled physicians, trained nurses and hundreds of other employes, its fame, which has spread to the four corners of the world—is merely the outgrowth of that modest "house by the side of the road."

After a decade of moderate success, the institution came under its present management. New policies, new methods and new principles were introduced. The old time "water cure," which was a rub-of-thumb affair, was replaced by rational hydrotherapy. The newest developments of medical science, both as to methods of mechanism, were gradually added in the effort to create an institution that should show in practical operation all the resources of physiologic medicine. At the same time, stress was laid on supplying all the comforts of a home and a hotel, in addition to facilities for the administration of baths of every description, electricity in its different forms, medical gymnastics and other rational agencies, with careful regulation of diet.

Steady growth led to successive enlargement of the accommodations. In 1902, a fire destroyed the main building and hospital. In planning the present magnificent structure, advantage was taken not only of the experience gained in the conduct of this institution but of similar enterprises and hospitals in this country and in Europe. The main structure is 550 feet long, fifty feet wide and six stories high. There are three extensions in the rear. To make the place entirely fire proof, wood was eliminated every where save in the doors and window cases. A ventilating system supplies 150,000 cubic feet of fresh air per minute. The cost of the building and its equipment has been nearly two million dollars. An annex purchased five years ago has rooms for from 250 to 300 persons, and in addition there are several large dormitories and numerous cottages for patients and employes. At present, there are about 1,000 guests, including those not receiving regular medical attention, while a force of about 1,700 persons is employed to care for them. This fact gives a striking proof of the elaborateness and

complexity of the care bestowed on the sick in a modern Sanitarium.

Last year a new surgical hospital was opened, embodying the latest and most scientific ideas in construction and equipment.

Being purely a charitable institution, and having no dividends to pay, the Sanitarium is able to make liberal expenditures for the indigent sick. In one recent year these amounted to over $150,000, and the total sum for the half century has been over $1,400,000. The total number of patients to date is over 104,000; this excluding guests not under a physician's care. At the present time, the patronage is far in excess of that of any previous time.

During the automobile rides provided by the Houghton profession two narrow escapes occurred. One machine in which Dr. H. M. Rich of Detroit was riding was struck by an engine and badly damaged, its occupants escaped uninjured. The other automobile driven by Dr. Dodge of Houghton and containing Drs. Peterson, Vandenburg and Smith was run into by another car. Baring a few bruises the occupants were uninjured. We are indeed grateful that the outcome of these accidents was so fortunate.

Among those who drove to Houghton and enjoyed the delightful automobile ride were Drs. J. W. DuBois, Grand Rapids; Dr. J. D. Brook, Grandville; Dr. J. H. Kellogg, Battle Creek; Dr. A. J. Baker, Grand Rapids; Dr. C. E. Boys, Kalamazoo; Dr. C. B. Fulkerson, Kalamazoo; Dr. G. L. LeFevre, Muskegon and Dr. W. T. Dodge, Big Rapids.

The Houghton Meeting was the first in the history of the organization that the House of Delegates was not in receipt of several invitations from localities seeking the next meeting. The Council was designated to receive invitations and determine the place for the holding of our Fifty-Second Annual Meeting.

The following Detroit physicians attended the Military Camp at Plattsburg: Drs. Geo. Fay, H. N. Torrey, T. A. McGraw, L. J. Hirschman, C. F. Kuhn, B. R. Shurley, Walter Vaughan, P. F. Morse, and James Inches.

Mr. J. Chalmers Montgomery of Coldwater, who is a Senior Medic of Johns Hopkins University is doing research work at the Michigan Home and Training School, Lapeer.

The State Board of Health and the State Board of Registration in Medicine transacted such business as came before them during the Houghton Meeting.

Dr. Carry Pratt McCord, Medical Director of the Research Department of the Michigan Home and Training School, Lapeer has been called to the front along the Mexican border.

Don't forget our advertisers. Their continued patronage should merit your continued appreciation and the giving them of your orders.

The Clinical Congress of Surgeons of North America will be held in Philadelphia the week of October 23.

After a prolonged illness, Agnes MacLennan Dodge, wife of Dr. W. T. Dodge, of Big Rapids, died on July 24, 1916 at her home.

Members are urged to send in news notes and items of interest.

Dr. R. A. Tearman of Munising is now located in Marquette.

Dr. Chas. F. Lynch of Chicago has been appointed full time health officer for Lansing.

FOR SALE—About Five Thousand Cash Practice, in progressive City of Three Thousand, County Seat, on Lake Huron and Dixey Highway. Ideal yachting, deer hunting and trout fishing in County. Beautiful Climate, many tourists, appointments to right man. Five Hundred Cash buys Five Room Office outfit, drugs, chemicals, good will, introduction. Established ten years. Moving to city. Good place to make money and save money and enjoy life as well. Address "DOCTOR" 137 Fitzhugh Ave., Grand Rapids, Mich.

County Society News

BENZIE COUNTY

The Benzie County Medical Society met at Mills Cottage, Benzonia, the girls dormitory of Benzonia Academy, which had been opened for the summer months for the accommodation of tourists.

The wives all came and a seven course dinner was enjoyed by all as the first thing on the program after which the ladies retired and the regular program was proceeded with.

The next meeting will be accompanied by a picnic dinner given by the ladies.

E. J. C. ELLIS, Secretary.

BRANCH COUNTY

The fourth annual picnic of the Branch County Medical Society, was held at Morrison Lake, July

18, 1916, and a most enjoyable time was had. Dr. S. Schultz opened his spacious cottage for the benefit of physicians and their families, and the wide verandas, fanned by cool breezes from off the lake, furnished a delightful place for spreading the well laden tables.

Stanley E. Weage—Branch County's popular young attorney, gave an address upon "The Doctor and the Law." It was a very able effort, detailing the legal relation and responsibility the physician holds toward his patient and the community, how such responsibility must be maintained, and how it must end, to keep within the statute. At the close of his address, Mr. Weage courteously answered many questions asked by the physicians, giving much light upon this important subject.

Dr. D. H. Wood, president of the society, opened the exercises with brief remarks, appreciative of the honor of his office. The doctor stated that "political honors to the physician were usually empty ones, seldom ever elevating one in his profession, for as such honors advance, his professional influence recedes, but honors accumulating in the line of one's life work are constantly enduring."

Branch County's annual picnic, like her annual banquet, has become a fixed affair, and is looked forward to each year with added interst and enthusiasm. There were about fifty present.

W. H. Baldwin, Secretary.

EATON COUNTY

The Eaton County Medical Society held the third regular meeting Thursday May 25 at the Hospital, Charlotte, Mich.

"Dermatological Clinic"

Robert H. C. Wollenberg, M.D., Detroit.

About twenty case being brought in by members for diagnosis.

The Eaton County Medical Society held the fourth regular meeting at Pine Lake, near Olivet Thursday, July 27. A basket dinner was served at noon by the wives and friends of the Doctors, about seventy-five being present.

In the P. M. the doctors were entertained at the home of Dr. Quick in Olivet, where they listened to a very interesting paper by Dr. R. C. Stone of Battle Creek on "Bone Surgery." Dr. A. W. Crane of Kalamazoo gave X-ray demonstrations by lantern slides of "Bone Surgery," and Dr. C. E. Boys also of Kalamazoo showed some very interesting plates of "Hip Surgery." Discussions were opened by Drs. Stimson and Blanchard of Eaton Rapids and Dr. Newark of Charlotte. Every one left, feeling they had profited greatly by the splendid program, while the ladies enjoyed a day's recreation at the lake.

The next meeting will be held Sept. 21 at Eaton Rapids.

GRAND TRAVERSE-LEELANAU COUNTY

The meeting of the Grand Traverse-Leelanau County Medical Society was held at Suttons Bay on Tuesday evening, August 1. A banquet was held at Suttons Bay Hotel, after which the party met at the opera hall. A well prepared paper entitled, "The Profession of Medicine, Retrospective, Introspective, and Perspective," was read by Dr. W. M. Payne. After the reading of the paper, a general discussion followed. A vote of thanks was extended to Dr. Payne.

W. D. Mueller, Secretary.

GRATIOT-ISABELLA-CLARE COUNTY

The July meeting of the Gratiot-Isabella-Clare County Medical Society was held in the Park House at St. Louis, July 20. Ten members and two invited guests, Drs. N. F. McClinton and J. W. McMeekin of Saginaw were present. The minutes of the previous meeting were read and approved. A communication was read relative to a military training camp for physicians, also one relating to a tuberculosis day.

Dr. McClinton then read his paper on Tuberculosis of the Kidney and Bladder. This was discussed by Drs. C. B. Gardner, I. N. Brainerd and J. W. McMeekin.

Dr. McMeekin then gave a very interesting talk illustrated with plates of the modern treatment of fractures. Those who were not present certainly missed a treat for the Doctor spent over two hours showing plates of bad fractures, and bad treatment of ordinary fractures. . His exhibit of cases over which malpractice suits have come was very enlightening. Althogether it was a very interesting and profitable meeting. Our only regret is the attendance was small. Both doctors were given a vote of thanks.

E. M. Highfield, Secretary.

LAPEER COUNTY

The Lapeer County Medical Society held their annual picnic meeting at Lake Pleasant on Tuesday, Aug. 9, 1916. It proved to be a very profitable meeting in every way and especially in way of "eats" which was furnished by the Ladies Aid Society of one of the churches close by.

Forty-two places were filled although the most of them were families of the doctors as the members

themselves did not give as good a turn out as we expected from some unknown cause. The meal proved too much for a few of those present as they were unable to put much enthusiasm into the meeting in the way of discussions of papers, etc.

We were greatly honored by having with us Dr. Warnshuis who read a paper on 1000 Cases of Industrial Accidents which gave us many helpful hints as to the proper care of injuries. Also Dr. Fredrich A. Reye of Detroit gave a very interesting talk on Mental Conflicts which was a talk that will be remembered by all those present.

The absence of many of the members proved quite a disappointment to those that were present and the ones who are trying to make the meetings as much of a success as possible by at least making an effort to get to a few of the meetings each year. It does not do justice to the out of town speakers to only have eight or ten members present and does not speak well for the Society. Our next meeting will be at North Branch on the 12th of September and it is to be hoped we will have a good turn out.

J. H. DOUGLASS, Secretary.

The Lapeer County Medical Society met at the Michigan Home and Training School, Lapeer, on Tuesday, July 11, 1916.

A good turn out of the members made the meeting of much more interest than heretofore and should make those that could not be present, feel as though they had really missed a meeting of great importance. A fine dinner was given by Dr. Haynes of the "Home" and as the day was extremely hot it was decided to have it on the lawn which proved to be a complete success in every way.

Dr. L. J. Hirschman, and Dr. A. P. Biddle of Detroit were our guests for the day, the former giving a talk on the Rational Treatment of Rectal Fistulae together with lantern slide demonstrations while Dr. Biddle gave us a very instructive Clinic on Skin Diseases.

Both of these subjects were fully discussed and proved to be of much benefit to each of the members. Dr. Haynes hospitality together with the help of his assistants made the day a very enjoyable one and one that will be remembered as a record meeting of the year.

Our meetings this year seem to be accomplishing more than they ever have before in every way, but more especially in getting out the members to the meetings. However, there is still chance for improvement along that line and it is to be hoped that all will be present at the picnic meeting which will be held next month at Lake Pleasant.

We have been quite fortunate in getting good speakers for each of our meetings, and if we expect to get these men it is our duty to support them by having a full attendance at each meeting and have a good discussion for each subject.

J. H. DOUGLASS, Secretary.

MARQUETTE-ALGER COUNTY

Meeting of the Marquette-Alger County Medical Society was held at Marquette County's Tuberculosis Sanitarium at Morgan Heights in the afternoon of July 26. The attendance at this meeting was twenty-three members, more than half of our total membership. It was a joint meeting of the Medical Society, Marquette County Board of Supervisors, and the Doctors and Nurses conducting the State Tuberculosis Survey.

There were three speakers on the program. The first speaker was Mr. D. W. Powell, Chairman of the Board of Supervisors and Chairman of the Morgan Heights Sanitarium Committee. Mr. Powell spoke a few words of welcome and told what they were trying to accomplish at the local sanitarium.

Dr. Vanderslice gave an outline of the plan of work and purpose of the State Tuberculosis Survey.

The principal address was made by Dr. V. C. Vaughan, Jr. who took up the general subject of Tuberculosis and dealt with it in a thorough manner. His remarks were well worth the attention given them and I doubt if he ever has spoken to a more appreciative audience.

A clinical case of acromegalia was presented by Dr. F. McD. Harkin. The special features of the case were verbally reviewed and demonstrated upon the patient.

A microscopical section taken from a sarcoma of the spermatic cord was exhibited by Dr. A. W. Hornbogen.

Lunch was furnished by the Sanitarium and served by the nurses, assisted by lady friends.

H. T. CARRIEL, Secretary.

SANILAC COUNTY

Over seventy doctors and their wives from Huron, St. Clair, Lapeer and Sanilac County Medical Societies spent an enjoyable time at the shore of Lake Huron Tuesday afternoon, July 18, at Lexington. The three former counties were the guests of the Sanilac Association on that day. The dinner was served by the ladies of Lexington. Papers were read by Drs. Hackett, Hirschman and Gleason of Detroit, followed by discussions of different topics of interest. It was one of the best social and business meetings of its kind ever held in the Thumb.

J. W. SCOTT, Secretary.

Book Reviews

DISEASES OF THE SKIN. Richard L. Sutton, M.D. Prof. of Diseases of the Skin. University School of Medicine. Cloth, 897 pps. Six hundred ninety-three illustrations; 8 colored plates. C. V. Mosby Co., St. Louis, Mo. Price $6.50.

A careful perusal of this volume promptly impresses one with its extraordinary worth. It is the outgrowth of the author's experience and study and records a successful effort to present the practitioner with a concise and comprehensive text of the entire subject of dermatology. The symptomatology, diagnosis and treatment of the various disorders are presented clearly and effectively. The practitioner will find effective and practical outlines of treatment that excel many other texts. In fact, the comprehensive discussion of treatment of given conditions causes this work to become of exceeptional value. This feature will evoke appreciation from every owner because of the help and suggestions that he will find. This book is one that is bound to be met with universal appreciation.

CEREBELLAR ABSCESS. Its etiology, pathology, diagnosis and treatment, including anatomy and physiology of the cerebellum by Isidore Friesner, M.D., and Alfred Braun, M.D., F.A.C.S. Ten full plates, 16 illustrations. Cloth, 185 pages. Price $2.50. Paul B. Hoeber, Publisher, New York.

This work is opportune and timely because it imparts the recent advances in our knowledge of cerebellar physiology, methods of diagnosis and the relation between the cerebellum and the static labyrinth. The combined efforts of the authors has resulted in an excellent presentation of the subject. The book consequently is one of intrinsic value.

SKIN CANCER. Henry H. Hazen, A.B., M.D. Prof. of Dermatology, Georgetown University. Cloth, 249 pps. Ninety-seven illustrations. C. V. Mosby Company, St. Louis, Mo.

This volume contains the latest views on malignant tumors of the skin and imparts the author's personal experience and clinical studies. The presentation is scientific and practical. It is the only recent monograph on the subject. In view of the importance of this disease and its wide prevalence this work is especially opportune. We mention the accurate pathology imparted and its employment in arriving at a correct diagnosis as but one of the excellent features. Treatment is not neglected but is concisely set forth on a basis of effectiveness.

DISEASES OF THE DIGESTIVE TRACT AND THEIR TREATMENT. A. Everett Austin, A.M., M.D., Assistant Professor of Clinical Medicine, Tuft's Medical College. Cloth, 549 pps. Eighty-five illustrations and ten color plates. C. V. Mosby Company, St. Louis, Mo. Price $5.50..

The author has accomplished his purpose of putting into pleasing form that which is known of the subject discussed. He has followed the didactic plan and presents a complete picture of each condition. Incidentally one is impressed with the method of correlating etiology and symptomatology and the extra-gastro-intestinal causes of conditions referred to the gastro-intestinal tract. Methods of diagnosis and treatment are understandingly presented and enhance the value of the text. Clear illustrations and radiographic records increase the interest and value. All in all the entire volume is bound to be of value and assistance to every purchaser.

A TEXT-BOOK OF PATHOLOGY. By William G. MacCallum, M.D., Professor of Pathology in the College of Physicians and Surgeons, Columbia University, New York City. Octavo volume of 1085 pages with 575 original illustrations. Philadelphia and London: W. B. Saunders Company, 1916. Cloth, $7.50 net.

This new work presents pathology from an entirely new angle. It considers pathology on the principle that practically every pathologic condition is the direct or indirect effect of an injury; that is, the direct effect or the immediate or remote reaction of the tissues. Tumors alone cannot be brought under this category.

In a word this book presents pathology on the basis of etiology. The treatment of the subject is not limited to anatomic and morphologic descriptions, but functional disturbances are discussed as well as those of a chemical character. Even symptoms are described. The entire book is based upon the study of material. It is in fact a text that is bound to find favor with the clinician and is a most refreshing addition to our literature.

PRACTICAL MASSAGE AND CORRECTIVE EXERCISES by Hartvig Nissen. Cloth 211 pages, 68 illustrations. Price $1.50. F. A. Davis Company, Philadelphia.

A valuable manual of corrective exercises based on the author's forty years of experience, practice and teaching. The methods employed and found most useful are "movements" and "manipulations." The manual will enable the physician to prescribe effective exercises for his patients.

MENTALLY DEFICIENT CHILDREN, THEIR TREATMENT AND TRAINING. By G. E. Shuttleworth, B.A., M.D., and W. A. Potts, M.A., M.D., Fourth Edition, Cloth, 284 pages, illustrated. Price $2.50. P. Blakiston Son & Co., Philadelphia.

A most dependable and instructive presentation of the subject. It merits careful study and rereading.

VENESECTION. A brief summary of the Practical Value of Venesection in Disease. For Students and Practitioners. Walton Forest Dutton, M.D., Cloth, 220 pages, illustrated. Price $2.50. F. A. Davis Co., Philadelphia.

The author discusses the value of venesection in various diseased conditions and points out its value as a scientific procedure in certain diseases. The

author's enthusiasm is apparent and in his illustrative cases he ascribes the successful outcome to the employment of venesection although he administered therapeutic remedies. It is an interesting presentation of the subject but one hesitates to commend the author's plan of treatment in the many conditions enumerated.

A TEXT BOOK OF PRACTICAL GYNECOLOGY. For Practitioners and Students. D. Tod Gillman, M.D. and Earl M. Gillman, M.D. Fifth Revised Edition. Cloth, 661 pages, 352 engravings, 13 full page half-tone plates. Price $5.00. F. A. Davis Company, Philadelphia.

This is a plain and practical book for the student and practitioner that in fifty chapters covers the essentials of Gynecology. It is authoritative in every detail. The text is amply illustrated with excellent cuts that emphasize the important facts. In this revision the author has brought the text up to date. It will be found a most satisfactory reference volume, a valuable guide and a practical presentation of present day genecological knowledge and treatment.

INFECTIONS OF THE HAND. A guide to the Surgical Treatment of Acute and Chronic Suppurative Processes in the Fingers, Hand and Forearm. Allen B. Kanavel, M.D., Assistant Professor of Surgery, Northwestern University Medical School. Third Revised Edition with 161 Engravings. Cloth, 499 pps. Lea and Febiger, Philadelphia.

This valuable text book should be referred to and studied by every practitioner and especially by the doctor who is called upon to care for industrial injuries. The author has imparted a scientific and anatomical technic of treatment that will, if observed, minimize the loss of members, prolongation of disability, permanent deformity and extention of the infective process. This third edition contains all the value of the previous editions and in addition two chapters on "Relation of Acute Infective Processes to Industrial Pursuits" and "Plastic Procedures Instituted for the Correction of Deformities."

RULES FOR RECOVERY FROM TUBERCULOSIS. A Layman's Handbook of Treatment by Lawrason Brown, M.D. Second Edition, Cloth, 185 pages. Lea & Febiger, Publishers.

This is a most excellent manual, filled with the knowledge that should be possesed by every patient. It tells the readers how and in what way he may co-operate in producing a recovery from his ailment. Further it is filled with dependable rules and instructions. Physicians will do well to recommend every one of their tuberculous patients to secure this book. It is a distinct adjuvant to your treatment.

ULTRA-VIOLET LIGHT, by means of the Alpine Sun Lamp. Treatment and Indications. Hugo Bach, M.D. Saxony, Germany. Cloth, 114 pages. Price $1.00. Paul B. Boeber, New York, Publisher.

The use of the Alpine Sun Lamp has secured a place in medicine. This book imparts a comprehensive description of its development and effectiveness and gives the indications and technic of employment. As such it supplies a want in imparting dependable information.

THE DIAGNOSIS AND TREATMENT OF HEART DISEASE. Practical Points for Students and Practitioners. E. M. Brockbank, M.D., F.R.C.P. Clinical Lecturer, Diseases of the Heart, University of Manchester. Second Edition. Cloth, 120 pages. Paul B. Hoeber, 67 59th St., New York. Price $1.25.

This convenient pocket manual is an excellent clinical reference and guide in cardiac auscultation. It will enable the practitioner who follows the outline and plan set forth to reach more accurate conclusion when making physical examinations of the heart.

Miscellany

Proper Self-Medication.—In the course of his testimony in the "Cardui" trial, John Leeming, M.D., Chicago, explained the extent to which self-medication is to be encouraged. Asked if it was very dangerous for a person who thinks he has a cold to take some aspirin without going to a doctor, he replied that, while in exceptional cases it might be exceedingly dangerous, in most cases of simple cold it would not be so in that nature's recuperative powers would in most cases throw off such a cold. He explained that he always advises his patients how to treat themselves for simple ailments and to come to him when there are danger signs. Asked if it was dangerous for a person with a cough to get any medicine without a diagnosis, Dr. Leeming replied that it would not be dangerous at all if the person understood his case and in consultation with his doctor he has been generally advised. In families where he is the attending physician he often advises not to send for him in case of a slight cold, but to take a little medicine that will help nature to throw it off (*Jour. A.M.A.*, April 22, 1916, p. 1330).

Viburnum Prunifolium Inefficient.—J. Clarence Webster, holding the Chair of Obstetrics and Diseases of Women in Rush Medical College, testified in the "Wine of Cardui" case that he gave up the use of fluidextract of viburnum prunifolium because he believed that the benefit that he obtained from its use in pain in association with menstruation, was due to the alcohol in it. He had never had any reason whatever to believe that viburnum was of any value in warding off a threatened abortion. When in cases of painful menstruation he used the solid extract which contained no alcohol, he could not get the same results that he had obtained before and he gradually gave up the use of the drug altogether. Arthur A. Small, senior physician at St. Joseph's Hospital, Chicago, testified of extensive experience with the use of viburnum prunifolium, while resident physician in the Toronto General Hospital. As a result of his experience there he is of the opinion that viburnum prunifolium is of no value in the treatment of female disease. In these experiments both the fluidextract and the solid extract were used and it was found that the alcoholic solutions would prevent or lessen pain in some cases. In other words the only action was that of the alcohol. J. B. DeLee, holding the chair of Obstetrics at the Northwestern University School of Medicine, testified that years ago he gave large quantities of extractum viburnum prunifolium for the prevention of miscarriage, but found it useless (*Jour. A.M.A.*, April 22, 1916, p. 1338; May 13, 1916, p. 1566; May 20, 1916, p. 1639).

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Original Articles

PAPAL PHYSICIANS.*

VERY REV. FRANCIS X. BARTH.
ESCANABA, MICH.

Mr. President, Ladies and Gentlemen:

I would have you believe that in permitting myself to accept the invitation to address you, so graciously extended to me by your President, I have done so with great trepidation of spirit. Obliged somewhat to leave my own sphere to enter yours, I wondered what subject that I might choose, without having recourse to stale platitudes, could prove both interesting and instructive to you. I decided to take a page of medical history, somewhat novel in its title and new in its development, and submit it to your consideration. But before opening this absorbing page of history, permit me in all justice to disclaim any personal merit in reaching the conclusions of this address. I am largely indebted for the most part to Dr. J. J. Walsh's two famous books entitled "The Makers of Modern Medicine" and "The Popes and Science." I secured some information from the "Britannica," "The Americana" and the "International encyclopedias," from "Puschman's Handbook of the History of Medicine," from Ludwig Pastor's History of the Popes and from various minor sources.

I would observe further that I am not here as a party man to defend something with which I am personally allied for I consider objectively, from the standpoint of accurate history, that the Roman Pontiffs in their world wide activities need no apologists.

There is, however, such a startling state of positive ignorance and such an erroneous pretentious knowledge with regard to the supposed attitude of the Roman Pontiffs to science, and especially to medicine, current as the result of false teaching, that I thought I might well be pardoned should I, in the interest of truth and correct knowledge, submit to you this interesting page, for, I assume that every physician being a lover of his science must at the same time be interested in its history.

Gentlemen, very much of the history of the world has to be rewritten in our day. Not only are new records added to historical sources, not only do the so-called facts of history take on new meanings in the light of subsequent events, but the point of view from which the past is observed changes with the ever varying social order. Nor is this the main reason. It is sad to say it, but the truth must speak in its season, there has been a systematic and methodic conspiracy against historical truth, as is made clear by the mass of histories, text books and special treatises bearing on the acts of the Roman Pontiffs with the world, which for three or four centuries have poisoned the minds of men and are no more entitled to the dignity of being called history than an almanac, to a scientific treatise on medicine.

When Leo XIII, that magnificent world genius, decreed to open to scholars the archives of the Vatican then, and only then, could be written a satisfactory history of that great period of the world out of which were to rise the modern states of Europe. Leo XIII intended by this action to make the Vatican library the focus of European scholarship. No collection of ancient manuscripts can compare with that of the Vatican; and its archives have a value which can hardly be exaggerated for materials of the history of the Middle Ages. Pope Leo determined to place both the manuscripts and the archives at the disposal of scholars. Some squeamish dignitary and overzealous adviser remonstrated saying: "May not some hidden secret come to light that had better remain buried?" Whereupon, the masterful Leo is said to have answered: "Let the truth be known and let the truth take us where it will."

Behold the genius, gentlemen, that must preside over the making of history—truth. This is precisely what the editors of the Cambridge Modern History mean when they state that

*An address delivered by the Very Rev. Francis X Barth, Dean of Escanaba, at the General Session of the Fifty-First Annual Meeting of the Michigan State Medical Society at Houghton, Michigan, August 15, 16, 17, 1916.

many a fabrication must give way before the cold scientific consultation of original documents. They say: "Ultimate history cannot be obtained in this generation; but, so far as documentary evidence is at command, *conventional history* can be discarded and the point can be shown that has been reached on the road from one to the other." As a sample, perfidious and deliberate, of conventional history let us glance at a "History of the Warfare of Science with Theology in Christendom" by Dr. Andrew D. White.[1] No reader can study this work without coming to the positive conclusion that the constant policy of the Roman Pontiffs has been to prevent the progress of science and especially to stifle medicine. The reason for this uninterrupted policy, as is so childishly presented in the name of scholarship by Dr. White, is that it was to the interest of ecclesiastics to be applied to for healing. Suffering humanity was to look to prayers and not to drugs, to *Agnus Deis* and charms and not to hospitals and a well trained body of physicians for relief. Accordingly, Dr. White declares that the Roman Pontiffs placed a ban on dissection, prohibited anatomy declaring its study a sin against the Holy Ghost, prevented by an enactment the study of chemistry and thus, "as the grasp of theology upon education tightened, medicine declined."

I will observe, first of all, that as far as the *Agnus Dei* or kindred articles of devotion are concerned there is as much relation between them and the Catholic religion as there is between a bread pill and the theory and practice of medicine. Next, I will observe to all who take on faith such nonsensical stuff as presented by Dr. White that in presence of original documents his so-called history falls to pieces. Let us take a single example. Most of what is said as to the opposition of the Roman Pontiffs to medicine during the Middle Ages is founded on a supposed prohibition of anatomy and on a subsequent equally supposed prohibition of chemistry.

Dr. White emphasizes these two documents so much that most readers cannot but conclude that, even without further evidence they are quite sufficient to prove his contention. But, gentlemen, place Dr. White's assertions, one more damning than the other on one side, then place along side of them the documents themselves and behold the gallant knight's mace falls from his hands. Scientifically speaking, there are no documents on the prohibition of anatomy and chemistry.[2] The document Dr. White has tortured out of all meaning is one of Pope Boniface VIII, bearing on the sepulture of bodies brought home from the East.[3] The reason for the bull is very well known. During the Crusades the members of the nobility who died at a distance from their homes in infidel countries were prepared for transportation and burial in their own lands by dismemberment and boiling. The custom was so widespread as to constitute a serious menace to health, and might have furnished occasion for conveyance of disease. It is unnecessary to say that it was eminently unhygienic. This barbarous and unnatural custom Boniface VIII condemned under pain of excommunication; and this bull, so Dr. White claims, because of the supposed opposition of ecclesiastics to anatomy, did actually retard the progress and development of medical science for several centuries.

Not less ridiculous is the supposed bull of excommunication for the study of chemistry issued by Pope John XXII.[4] Now, this bull was a condemnation of certain alchemists who claimed to be able to make silver and gold out of the baser metals and who rascally exchanged the same for real coin. It was the legitimate prosecution and condemnation of real gold brick men, and this salutary measure for the protection of unsuspecting people, Dr. White presents as a Pontifical enactment proscribing the study of chemistry.

Face to face, gentlemen, with this intolerable conspiracy against any phase of historical fact, no matter by whom advanced, is it not the duty of every student, regardless of condition, to search for the actual truth and when the facts in original documents are authentically set forth to accept gracefully the conclusions? As a matter of fact, there is, and can be, no antagonism between religion and science. Up to the present moment, science, with all its wonders, has not destroyed one iota of Christian dogma; nor does the blatant assertion that it has, come from the scientist himself. The scientific movement of our day is largely in the hands of its popularizers and is made to appear as a witness against God and the Church. Read the scoliast, the cheap Sunday editorial and magazine writer; listen to the obfuscated professor or superficial school teacher rant on the

1. Read "Popes and Science" by Dr. J. J. Walsh.

2. Read Dr. Walsh: "The Supposed Papal Prohibition of Dissection" in "The Popes and Science." Page 28.

3. Read text of original document produced for the first time in English by Dr. J. J. Walsh "Popes and Science."

4. Read the interesting account of how Dr. Cruikshank of Brooklyn, N. Y., quoted Dr. White unfortunately in a lecture published in the Medical Library and Historical Journal of Brooklyn for July, 1905. See Supposed Papal Prohibition of Chemistry "Popes and Science" by Dr. Walsh. Page 120.

all powerful sway of science and you will hear that God, the soul and all other superstitions must give way. Then on the other hand, sit at the feet of the great scientist himself, read his books or listen to his teaching and usually you will find a man loving his science and through it believing and adoring his Maker.[5]

I would observe, gentlemen, that if any man wishes to deny God and spurn His laws for the government of the soul he ought to do so on his own responsibility and not tarnish the sacred name of science, which, but bespeaks the glory of the Creator by seeking in it an excuse for his own delinquences. Such men are not scientists nor are they any more qualified to speak in the name of science than the artful quack, who with pretentious knowledge and shameful practice lowers the dignity and nullifies the efficacy of your own profession. Permit me, gentlemen, to illustrate the foregoing by a simple example. Now, I said scientists, as a rule, do not deny religion; but a few years ago Thomas Edison declared himself a materialist. He had satisfied himself, he said, that the physico-chemical forces at work in the brain, with the resultant electrical effects, were sufficient to account for all the phenomena of conscious life in man. Up to this moment, Mr. Edison had been known as an ingenious inventor of useful mechanisms. His success in bending the forces of nature to his will had won for him a well deserved renown. He was recognized as an adept in the application of science to practical ends. Now, Mr. Edison has turned philosopher but his profession of materialism has left the world undisturbed and that for this reason: after professing his belief in materialism and summarily brushing aside the claims of religion Thomas Edison said: "I have always been a very busy man and really have not had time to study religion at all." Of what value before any court will Mr. Edison's testimony for or against religion be worth? How far did Mr. Edison's science determine his wonderful conclusion? If Mr. Edison knew no more of science than he appears to know of philosophy and theology we would never have heard about him.

Now let us glance at a real scientist, a master in Mr. Edison's own line. Not a mere applier of principles already discovered but himself a discoverer, a man who according to the testimony of Clausius[6] possessed all the characteristics of scientific genius, spacious vision, acuteness and infallible accuracy in deduction. I salute Andre Ampere, who in consequence of his brilliant discoveries has left his name on the scientific phraseology of our day as a glance at your electric metre will show you.

Of Ampere's attitude towards the Catholic Church Frederic Ozanam says: "Religion presided over the labors of Ampere's mind, shed its light over every field of his thought, and it was from this sublime point of view he judged all things, even science itself. This venerable scientist with all his wisdom and glory bowed unreservedly before the mysteries of Divine Teaching. He knelt at the same altar as Descartes and Pascal; side by side with poor women and children, humbler in soul than the least of them."

In concluding this thought, what I wish to emphasize is this: Ampere brought the same power of his analytical and synthetical mind to bear on religion as he did on science, and as he himself tells us, the result of his study and meditation was to compel him more ardently than ever to profess his Catholic Credo.

Now compare the two men:

Edison: "There is no God, no soul, hence no necessity for religion. Electric currents explain all the phenomena of conscious life in man. I have not had time to study religion and know scarcely a thing about it."

Ampere:[7] "I have studied with all the power of my mind the wonderful works of God and through the works of the Creator only I perceive that we can come to the knowledge of the Creator Himself. Just as the real movements of the stars are hidden by their apparent movements, and yet it is by observation of the one that we determine the other, so God is in some sort hidden by His works, and yet it is through them that we discern Him and catch a glimpse of the Divine attributes."

Thus if in the minds of the greatest scientists there is in fact no hostility between their profession of Christianity and the conclusions of their science, we may justly conclude that this supposed antagonism advanced by these champions of science, Edison and others to the contrary, is purely imaginary.

Insofar, gentlemen, as this question may be of interest to you to-day I must call your attention to the fact that the Roman Pontiffs have never been a stumbling block to the progress of science; on the contrary, the successors of St. Peter were carried away for seven centuries by the educational "zeitgeist" of their day. They gave money liberally and munificently and what

5. Read Kneller's "Christianity and the Leaders of Modern Science."
6. Read Kneller already referred to.
7. Read Kneller's "Life of Ampere" also "Makers of Electricity" by Potamian and Walsh.

was more to the point extended their patronage to scholars, artists and scientists in every intellectual department of life.[8] In view of the fact that the contrary is so universally held, it will be interesting to know, if in your line, I may be able to present anything to you worthy of your respectful attention. I will review a chapter from Dr. Walsh's Scholarly Book "The Popes and Science," wherein is treated the succession of illustrious papal physicians for seven centuries, many of them the most eminent doctors the world has ever seen. We will inquire briefly whether it is possible in this intimate relationship that existed between the popes and their physicians, who were also professors of the Papal Medical Schools, that friction or opposition could have ever existed.

Let us begin with the pontificate of Innocent III.[9] Probably, the most important work that the Popes accomplished for medical science in the Middle Ages was their encouragement of the development of a hospital system throughout Christendom. The great Pontiff who inaugurrated this work was Innocent III. The physician who was chosen by the pope to superintend this work was Guy of Montpelier, who was summoned to Rome in order that he might re-establish the hospital the Santo Spirito in accordance with what were considered to be the latest ideas in the matter of hospital building and the enlighted care of the sick. Rudolph Virchow[10] is first class authority on the hospital question and he hails Innocent III as a great humanitarian benefactor. He gives the names of eighty towns that were immediately influenced by the example of the first papal hospital. I submit to you the opinion, gentlemen, that if, as Dr. White asserts, the Roman Pontiffs had been an obstacle to medical progress and were so anxious to sell *Agnus Deis* and articles of devotion surely Innocent III and his successsors were very foolish and short sighted to prepare the way for the advance of medicine all over Europe by establishing well equipped first class hospitals.

The next doctor of note was Richard the Englishman who was body physician to Gregory IX. He had a universal reputation as a learned and clever man.

After Richard the Englishman comes Alderotti, who was physician to Honorius IV.[11] His life covers the history of the best part of the thirteenth century. During Alderotti's life a physician named Peter of Spain became pope under the title of John XXI. Peter of Spain was a distinguished natural scientist and the most perfect encyclopedist of his time. He was the first to write on the external anatomy of the eye, eight coats of which he described beginning with the conjunctiva and ending with the retina. If the established policy of the papal government was set in deathly combat against the progress of medical science, it is a strange thing that the college of Cardinals elected to the Pontificial chair so illustrious a physician as Peter of Spain.

The next great papal physician is Simon Januensis body physician to Nicholas IV. He was probably the writer of the first medical dictionary a very important work in the field of synonymics.[12] In his glossary you will find six thousand articles and it seems to have been the most consulted work for over one hundred years. It is interesting to note, and serves our purpose, that Simon Januensis received great encouragement in the production of his book from Nicholas IV and Boniface VIII, the very pope whom Dr. White declares retarded medicine for hundreds of years.

The next doctor of note is Guy of Chauliac, the father of modern surgery, and body physician to Urban VI. The popes had now removed the seat of the Papal Government from Rome to Avignon, but they still retained their policy of keeping in touch with the best physicians of their times. This is illustrated by the relations of the popes with Guy of Chauliac, a physician far in advance of his day;[13] for he taught that no one could practice surgery, with any hope of success, unless he devoted himself to careful dissection of the human body.

The next physician to claim our attention is an interesting man, not so much that he accomplished anything remarkable but because I desire to make him serve a useful purpose. His name was Cecco di Ascolo; he was a clever physician, a distinguished poet and philosopher. He was body physician to John XXII but left the service of the pope and returned to Bologna to teach astrology, which, at that time, was a department of medicine because the stars were supposed to have had an influence upon human health. Cecco got into a controversy with another doctor, one Dino de Garbo. The controversy waxed warm and poor Cecco was denounced to the public authorities as undermining the basis of government and, as the result of a bitter feud, was condemned to the stake.

8. Read Ludwig Pastor's History of the Popes Vol. I, P. 52 et seq. Vol. V, P. 329 et seq. Vol. VI, P. 458 et seq.

9. Read "The Foundation of the City Hospitals" by Dr. Walsh "The Popes and Science." Read also Ludwig Pastor's History of the Popes Vol. V, P. 61 et seq.

10. See "Makers of Modern Medicine" by Dr. J. J. Walsh, P. 359.

11. Read Dr. Walsh "Popes and Science."

12. Read "Puschman's Hand Book" of the history of medicine. Read also Dr. Walsh "The Popes and Science."

13. Read article in the "International Encyclopedia."

Now in this controversy between doctor and doctor, I have no doubt that some ecclesiastics were mixed up; but religion has no more to do with this than science is to be blamed because scientist opposes scientist, or doctor burns doctor. May I defend the thesis that science opposes science because there is in the record, startling in its details, that scientist has bitterly opposed scientist or doctor has bitterly opposed doctor? Such a thought is absurd. May you defend the thesis that religion is opposed to science because some ecclesiastics have condemned scientific conclusions or peeped around the corners with hypocritical glee when poor Doctor Cecco was burning? Never, gentlemen, it is absurd. Now let me make the case against ecclesiastics as bad as I can. I will even admit Galileo as a witness against them but at the same time I must say that in the history of medical discoveries there has been more unkindness and opposition between doctor and doctor, between scientist and scientist than there has ever been in all history between scholars and ecclesiastics. This is perhaps so startling a declaration to you that it requires elucidation. As to Galileo, I hear everybody say, does not his case show the unscientific temper of churchmen and their set opposition to free thought? Galileo is the one stock argument against the Church. The fact that the continuous policy of the Roman Pontiffs for centuries has been to favor every phase of human investigation, with the single exception of what pertains to the domain of faith and morals, is to no purpose. Galileo is led forth on every occasion and is made to prove that science has always had its bitterest opponent in theology, and its most uncompromising foe in the Roman Pontiff. There is no doubt that Galileo was prosecuted by the Roman inquisition on account of his teachings. But if Galileo had not endeavored to prove his scientific teaching by the Bible[14] I question whether he would have had any trouble with Church authorities. As far as *absolute* free thought is concerned, it is a misnomer. Assuming for the sake of argument the validity of the claims of religion to the allegiance of man how is any man free to deny his obligation or to change his belief? Some men write to-day of the necessity of a new religion. This is absurd, for if religion be the relationship between God and man how may it be changed or even regulated by the inferior party? It is absurd to say so, for in the domain of faith and morals, I have no free thought any more than you are free to teach that a man's appendix is in his foot. As far as this controversy is concerned Professor Huxley writing to St. George Mivart in 1885 said: "I gave some attention to Galileo when I was in Italy and I arrived at the conclusion that the pope and the College of Cardinals had rather the best of it." To return to my elucidation, let me take the case of Harvey[15] who discovered the circulation of the blood. When Harvey made his wonderful discovery he was but 25 years old. He was afraid to announce it for he feared his own profession; not because they could or would burn him at the stake, but because he realized envy, jealousy and human cantankerousness to be sometimes a more burning instrumentality of a man's undoing than the fire of the stake itself. He first taught the pupils of his class hoping through them to influence public opinion. He waited until he was 40 years old to publish his book, and when he did so, he lost many of his friends because physicians would not believe that a man who could teach such a strange idea as the circulation of the blood all over the body from the heart to the surface and back again, could possible be in his right mind. They therefore burnt him, metaphorically speaking, when they questioned his mental integrity; for when Harvey appeared on the streets the common people tapped their foreheads and smiled derisively at the poor man's vagaries. However, in all justice it must be said, that very soon this opposition disappeared, for the truth must always prevail, and Harvey left at his death a handsome fortune. But I submit the opinion that if in Harvey's time ecclesiastics had half opposed him for ever so brief a time, as physicians did, we would never have heard the end of it. Consider the case of Vesalius, the father of modern anatomy. He was not 30 years of age when he claimed the right to teach his teachers.[16] The fiercest opposition arose on all sides to Vesalius. One day, to pursue his studies, he and his friends stole a cadaver whereupon the people arose against him. Professor White claims him as a martyr of anatomy but I believe even today in many a locality, if the same thing were done in the same way, the same results would take place. It is, however, interesting to inquire why did so great a man as Vesalius go from the intolerance of the Netherlands to Rome?[17] How is it he was so free *there*, with unlimited liberty, to pursue his studies at the same time receiving the approbation of his pontifical patron?

14. Read article in Catholic Encyclopedia.

15. Read the "Britannica;" "Americana" and the International Encyclopedia.

16. Read article in Britannica.

17. Read article in "Americana."

At this juncture, it is instructive to glance at Servetus who had so much trouble while at the university of Paris. He had suggested certain changes in the mode of giving drugs. He had much to do with the general introduction of syrups to replace more nauseating preparations of medicine. His ideas met the most rancorous opposition. Factions were formed in the university. Riots took place in the streets and some students were wounded or killed. All of this occurred over the question whether medicine given to patients should be administered pleasantly or not. Poor Servetus had to leave Paris and when he got to Geneva, because of some book he wrote on the "Renewal of Christianity" Calvin burnt him at the stake.

Let us examine the life of Stensen who discovered and announced the fact that the heart is a muscle. Up to this time, the heart had been considered, not figuratively, as we now speak, but literally, as the seat of the emotions. Here comes along a young doctor who tells the whole world that it is wrong and at once becomes the object of bitter denunciation and persecution on the part of his brother scientist and physicians. Stensen was obliged to leave the Netherlands but why did he go to Italy the place above all places where Dr. White declares the Roman Pontiffs throttled the progress of medical science? He went to Rome, gentlemen, to find under the protection of the pope more freedom of thought for research, greater opportunity to continue his original investigations and greater appreciation of his new discoveries than he could find in any part of the world. I call your attention to Edward Jenner the discoverer of vaccination.[18] His successful solution has probably saved more lives and suffering than any other single accomplishment in the history of medicine and yet read the opposition led by physicians against the new idea.

Consider the case of Auenbrugger[19] who discovered the method of percussion of the chest which is so helpful in the diagnosis of chest diseases. He was 25 when he made his discovery but he did not publish it till he was 40. He dreaded, as he wrote, the envy, blame and even hatred and calumny that would come to him from those, who, above all other men, should receive with delight the new discovery. Nearly fifty years afterwards Laennec[20] completed the development of the diagnostic methods necessary for the differentiation of chest disease by the discovery of auscultation. Laennec's discovery, like Auenbrugger's, received a cool reception. Some physicians at once proclaimed that nothing could be accomplished for the progress of medicine by mere drumming on the chest. Laennec himself sums up the entire matter by saying: "Our age is not inquisitive and new discoveries are met by smiles and mocking remarks. It is easier to condemn than to test by actual experience." One of the great scientists of the last century was Dr. Thomas Young to whom[21] we owe so much with regard to the theory of light waves and the existence of ether to carry them. Scientists refused to listen at the beginning, though now it is the ground work of our thinking with regard to the movement of light. Dr. Young to avoid persecution and deprivation of practice was compelled to publish his grand discoveries and papers anomymously. In the French academy he was opposed by such men as LaPlace, Poissin and Biot and it was not until 1823—twenty-five years after his discovery, that he received any recognition. Dr. Young's disgust was so great he resigned from the Royal Society and gave himself to the study of Egyptian hicroglyphics where he distinguished himself.

Examine the history of[22] Dr. Oliver Wendell Holmes who made shrewd observations on puerperal fever and its causes. He lost most of his practice and many of his physician friends, who said that it was a raw idea to alleviate the pangs of childbirth by a little poetry. These shrewd observations of Holmes were perfected by Semmelweiss, teacher of obstetrics in Vienna. This great doctor observed that it was the physicians themselves and their students engaged in pathological work at the same time they were taking their course in obstetrics who caused the havoc among the patients in the obstetrical ward in the hospital. Semmelweiss insisted that this state of affairs must cease and that while the students were engaged in pathological work they must not be allowed to attend obstetrical cases. Poor Semmelweiss lost his position as a consequence and was sent to an insane asylum where in course of time he recovered from his disappointment.

I could furnish you, gentlemen, with a long list of scientific men like Pasteur, Chm, and others, who met the same fate and yet I would be a fool even to desire to defend the proposition that science opposes science. There must, however, be some reasonable explanation of this

18. Read Biography of Jenner in "Makers of Modern Medicine" by Dr. J. J. Walsh.

19. Read Biography of Auenbrugger in "Makers of Modern Medicine."

20. Read Biography of Laennec in "Makers of Modern Medicine."

21. Read Biography in appendix notes in the "Popes and Science" by Dr. Walsh.

22. Read "Medical Essays." Holmes works.

characteristic in men. It is to be found in psychology. It is old age opposed to youth—it is envy, jealousy and cantankerous human nature that loves conservatism and opposes innovations. I observe doctors and scientists in opposition to Laennec, clergymen in opposition to Jenner or Galileo, Calvin burning Servetus or doctors burning poor Cecco. I may not lose my head or bear false witness against my neighbor. It is not theology or pathology or biology or any other ology that I must blame but human nature itself gone wrong; jealousy, envy, hatred supreme in the mind over every other consideration that force scientist against scientist, priest against priest or doctor against his brother. Let us now return to poor Cecco di Ascolo whom we left burning at the stake, and take up once more the burden of this address.

The next great doctor that appears is Joannes de Tornamira who was body physician to Gregory XI. He wrote a book called the "Clarificatorium" for young physicians and students, which, according to "Puschman's Hand Book" was the most used text book for two centuries. On returning to Rome from Avignon, Gregory XI appointed as his physician Francis of Sienna, an eminent scientific physician of the day. The next papal doctor is Baverius de Baverris, physician to Nicholas V. He wrote a book on the differential diagnosis of hysteria, catalepsy, epilepsy and syncope. He made shrewd observations on gangrene and its causes and he was the first to prescribe iron for chlorosis. He, of course, did not know that chlorosis was due to a lack of iron but administered it for empiric reasons. In general, it is said of him that he anticipated very unexpectedly neurotic conditions supposed to have been recognized much later than his time.

The next distinguished papal physician is John of Vigo who was attached to the court of the fighting Pontiff Julius II. He was the first to write a treatise on wounds caused by fire arms. He recognized that fracture of the inner table of the skull might take place without that of the outer. All together he was a shrewd and clever observer. After the pontificate of Julius II, there was a change in the Roman policy as regards the medical schools. From now on the list of the papal physicians is the roll of the professors of anatomy of the Papal University Medical School. At this period a great trinity of anatomical professors flourished in the medical schools of Italy and each of the three received great encouragement from Roman Pontiffs. These three men were Vesalius, Columbo and Eustachius. Columbo was a pupil of Vesalius, the greatest anatomist of his time. It is interesting to read of his reception at Rome, how his course in anatomy was so enthusiastically attended that there were present several hundred people, among them priests and even cardinals whenever he gave his anatomical demonstrations on the cadaver.

All of this took place at the same time that Dr. White declares anatomy was proscribed in Rome and theology trampled upon medicine. Now the truth is as Dr. Fisher observes,[23] that this particular age at Rome was an age of remarkable tolerance for scientific investigation.

After the death of Columbo the next great man is Varolius papal physician to Gregory XIII who will be remembered as the pope under whom the reform of the Calendar was made by Father Clavius the great mathematician and astronomer.

To Varolius, we owe one of the earliest detailed descriptions of the anatomy of the brain and his name is engraved in the history of medicine because of "Pons Varolii" an important structure in the brain, now simply referred to as "the pons," was named after him.

After Varolius as papal physician comes Piccolomini and then Casalpinius[24] whom the Italians hail as the discoverer of the circulation of the blood before Harvey. These two men were illustrious physicians and in their day added prestige to medicine. Next in importance is Malpighi the great founder of comparative anatomy. He perfected Harvey's great discovery.[25] His name is deservedly attached to more structures in the human body because of tissues which he studied in detail, than any other man in the history of medicine. Malpighi represents the beginning of most of the comparative biological sciences and his original observations upon plants, the lower animals and then on the anatomical structure of man stamp him as an investigating genius of the highest order.

He was body physician to Pope Innocent XI. Lancisi the father of modern clinical medicine comes next. His books are classics. He was physician to Innocent XI and XII and to Clement XI. Finally, gentlemen, let us hail Morgagni whom Virchow calls the Father of Modern Pathology, body physician to five Pontiffs, the greatest of whom was Benedict XIV. Virchow calls Morgagni the Father of Modern pathology because he was the first to point out

23. Read annals of anatomy and surgery Brooklyn 1870-1880.

24. Read article on Casalpinius in "Popes and Science." Page 236 by Dr. J. J. Walsh.

25. Read article in Britannica on Harvey's discovery. Read also Malpighi in "Popes and Science," Page 240 by Dr. J. J. Walsh.

that for a knowledge of disease it is quite as important to know where the disease has been as to try to learn what it has been. Morgagni's life of ninety years covers most of the eighteenth century and proves that in his age there was no friction between religion and medicine. After Morgagni's time the days of the French revolution cast a cloud over the Papaey. There were political disturbances in Italy which caused the popes to be shorn of temporal power, and as a consequence, their medical schools lost in prestige and finally disappeared. Alas that it is so![26] for while they lasted papal physicians were among the most distinguished discoverers in medicine. Remember that the term medicine, at that time, included within itself botony, astrology, chemistry and mineralogy. To talk of opposition between science and religion in these centuries of friendly relations between the popes and distinguished scientists is to indulge in absurdities, common enough in conventional history of which Dr. White is a liberal manufacturer, but which original documents, the ground work of scientific history, push farther back into the rubbish chamber of outlived traditions.

And now, gentlemen, allow me to salute the dignity and nobility of your profession, for you are the sentinels of the commonwealth of Michigan. Assembled here in solemn convention you merit the respectful attention of the people for you are their effective guardians against the scourges of society—syphilis, tuberculosis, cancer, typhoid, pneumonia and other ills that attack the bodies of men. There is a close relationship between you as physicians of the body, and the ministry I represent, as physician of the soul. As the body and the soul are one entity and are therefore not opposed, I cannot see how your science and mine can be antagonistic one to the other. Mr. Cross has invoked a blessing upon you this morning, and so do I. I implore a two-fold grace, for I believe in prayer, as men have believed always, because there are more things wrought by prayer as Tennyson reminds us, than this world dreams of.

I beseech for you, gentlemen, the scientific temperament, the all-absorbing, broad, scientific temperament that knows no distinction of race or creed or paltry differences. I demand it for you because without it your profession is but a by-word. I beseech for you the humanitarian temperament without which your science is cold and fruitless; but the two united make the perfect physician.

Now, gentlemen, in conclusion, I thank you for the great privilege you have accorded me to present to you this interesting page of medical history. I extend my compliments to you at the opening of this session and I hope you will achieve great success in this convention. Let your voices ring out clear and true. Do not be compromisers for why should you be afraid of envy, superstition, ignorance or the unreasonable opposition of physician or layman? Take your stand fearlessly that you may deserve well of the commonwealth. It is written on the escutcheon of Michigan *"si quaeris peninsulam amoenam circumspice," if you seek a delightful peninsula, look around you. Change one word, "si quaeris peninsulam sanam circumspice,"* if you desire to find a peninsular state that is healthy, hygenic, and guarded scientifically by the sentinels of the state—its competent physicians—*"circumspice"* look around you.

26. Read concluding paragraph Page 220 "Popes and Science" by Dr. J. J. Walsh.

METHODS IN DIAGNOSIS OF SURGICAL DISEASES OF THE ABDOMEN.*

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The diagnosis of abdominal diseases has an intense importance on account of the fact that in many of them prompt surgical interference is demanded. Pain, vomiting or other symptoms may be due to a mere temporary impairment of digestion or it may be indicative of a serious condition demanding immediate operation. The diagnosis, therefore, must be considered a critical matter, both for the patient and for the surgeon. The accuracy of his methods and the soundness of his judgment in a few hours will be put to the test by an operation or by the course of the disease. The importance of the diagnosis of abdominal disease and the difficulties connected with it has prompted the writer to make a study of the methods involved.

Diagnosis may be divided into two distinct processes.

1st. The collection of the facts that bear on the case.

2nd. The conclusions or inferences from these facts.

All the clinical data and laboratory findings belong to the first part of the procedure. They together form the evidence from which the diagnosis is to be induced. There was a period

*Read at the Fifty-First Annual Meeting, M.S.M.S., Houghton, Aug. 15-16-17, 1916.

when the wonderful progress in physics and biochemistry created an unwarranted belief that the laboratory would supplant clinical data. However, the clinical history has again come into its own and it is now recognized as the foundation of diagnosis, while laboratory findings provide important aids and confirmatory evidence.

Information bearing upon the case is obtained from every available source; from personal and family history, from physical examination, by means of interrogation of the patient or of others, by laboratory tests and X-ray findings. All the data thus collected must be viewed in the light of testimony submitted, and as evidence from which conclusions concerning the diagnosis are to be reached.

In actual practice the collection of data and the diagnostic inference mingle. The half-formed conclusion waits for more clinical evidence. Notwithstanding this, these two processes are separate and distinct. The error in diagnosis may depend upon incomplete or defective clinical data, or upon faulty methods of inference. This paper is devoted particularly to the second of these processes, viz: methods of inference in the diagnosis of abdominal disease. This paper, therefore is not concerned so much with the newer diagnostic signs or symptoms of abdominal disease, nor with the newer methods of obtaining them, but rather with methods of utilizing the available data to arrive at correct diagnostic conclusions. A study of this subject shows that there are four methods of inferential diagnosis.

THE PATHOGNOMONIC METHOD.

In certain cases a symptom or set of symptoms definitely indicate by their presence the nature of the pathology. In these instances the symptoms or syndrome is said to be pathognomonic of the disease. For example: A certain form of excruciating pain is pathognomonic of gallstones. In a general way there are pathognomonic signs and symptoms present in cases of acute appendicitis, perforating ulcer of the stomach, acute intestinal occlusion, acute peritonitis, strangulated hernia and other forms of acute strangulation. Like the sign at the cross-road, the clinical picture in these conditions points directly to the diagnosis.

However, in a very large proportion of cases of abdominal disease, the signs and symptoms are not absolutely pathognomonic. It is a most common experience to find the condition in the abdomen different from what the symptoms seemed to signify. In other words they were not really pathognomonic. In its early stages it is not uncommon to find that the symptoms produced by one abdominal disease cannot be distinguished from those found in other diseases, and the early differential diagnosis must depend upon very close and careful employment of every available method of examination. The X-ray has contributed much assistance, especially in lesions of the stomach and intestine, but I believe that however conclusive the skiagraph may be, it is unwise to let it supersede the clinical signs, symptoms and other data.

A new method of examining the gall-bladder is described by J. B. Murphy. The ulnar edge of the hand is made to curve under the free border of the ninth rib. A percussive blow is struck when the patient has reached the height of inspiration, and if there is disease of the gall-bladder, he will experience a sharp pain. A similar procedure is used in detecting disease of the kidney .

One of the newer signs of appendicitis is elicited by the inflation of the colon by means of a colonic tube. When the air distends the cecum, distress is experienced if there is appendiceal disease. A very interesting and suggestive sign of chronic appendicitis is described by Dr. C. D. Aaron. Firm, persistent pressure is made over the appendix and a spasm of the pylorus is thereby induced if appendicitis is present. A description of the signs of abdominal diseases that are furnished by X-ray findings would lead this paper aside from its subject proper. It is sufficient to say that all these are attempts to make complete the pathognomonic syndromes of the different abdominal diseases.

The fundamental weakness or difficulty with the pathognomonic method of diagnosis arises from the fact that different pathologic conditions in the abdomen often produce a similar symptom complex. The X-ray findings may be equally ambiguous. However, when the data is obtained from different sources and by different methods, and when the X-ray and laboratory findings corroborate the clinical data, the pathognomonic picture becomes highly reliable.

THE METHOD OF IMMEDIATE SUCCESSION.

The second method is based on the sequence of cause and effect. When vomiting follows the inception of pregnancy a diagnosis is promptly made. In the same way the symptoms that follow the taking of a poison or unknown drug are ascribed to its effect. By the method of Immediate Succession we are inclined to infer that certain symptoms following a radical change in occupation, or diet, or climate may be traced to one of these factors.

It is on account of the employment of this method that so much importance attaches to the circumstances surrounding the beginning of a disease. If a patient has abdominal pain, or vomiting or intestinal stasis or distention or any other symptom of abdominal disease, in so far as diagnosis is concerned, the most important part of the clinical data is that connected with the inception.

Under what circumstances did it begin? That is the all-important question. Not its severity, nor duration, nor course. Not that these matters should be overlooked. How many chronic abdominal diseases, if their origin is investigated, can be traced to a difficult confinement, an injury to the abdomen, or some other immediate cause of which the disease is a direct successor!

The discovery of such a succession of events may not give a full and complete diagnosis, but it furnishes a most important key to a knowledge of the case.

This method of diagnostic inference may be applicable to any stage of a disease. For example; symptoms that are cleared up by a thorough catharsis are in some way connected with colonic stasis. A tumor in the lower abdomen that disappears by catherization may be considered to have been a urinary tumor.

THE METHOD OF ELIMINATION.

Probably every inferential diagnosis begins by the process of elimination. By the absence of certain signs and symptoms the possibility of certain diseases can be at once erased. If an acute abdominal pain is on the left side, we are inclined to eliminate appendicitis. If there is no vomiting, we eliminate acute obstruction of the small intestine. The absence of jaundice means the absence of complete obstruction of the common bile duct. In this way the problem can be reduced to a differentiation between two or three possible diagnoses. However, the method of elimination is a negative method and it is rarely that it will lead to a positive conclusion. In the majority of instances, several possible conclusions remain after the process of elimination has been used.

It is seldom that by the process of elimination a differential diagnosis can be made between gallstones and duodenal ulcer; nor between gallstones and gastric ulcer. The absence of distress after meals does not eliminate gastric or duodenal ulcer, and the absence of gallstone colic does not eliminate the presence of gallstones. Even the presence of pain on the left side of the abdomen does not warrant the conclusion that it does not arise from appendicitis.

In the majority of cases the method of elimination is useful in narrowing the problem of diagnosis to the consideration of a few possible conditions.

The ground for eliminating a disease is usually the absence of certain signs or symptoms, but it is necessary to exercise great care in the process. In a general way we eliminate the diagnosis of disease in an organ that performs its physiological function normally. For practical purposes this rule may serve, but in a stomach with a normal function there may be a latent ulcer, and there may be no detectable defect in the function of a gall-bladder containing stones, and accordingly, the elimination of disease from an organ because its function seems normal, must be exercised with reservation.

In regard to cancer, its elimination from the field of diagnosis cannot be made by the absence of pain, nor by a gain in weight. In cancer of the intestine there is generally blood in the stool, but not always, and consequently, malignancy of the bowel cannot be eliminated in this way. Nor is there any age that gives a warrant against it; therefore, the elimination method of inference is restricted in its application.

THE METHOD OF SYNCHRONOUS VARIATION.

This method of diagnosis rests upon the assumption that when symptoms and a condition show correspondinging variations, there is some causal connection between them. When a headache and other symptoms grouped under the name biliousness vary in intensity according to the degree of intestinal stasis present, there is ground for inferring that the intestinal stasis is to some extent the cause of these symptoms. By the same method we conclude that the various symptoms that increase in intensity during menstruation are in some way connected with some pathology in the uterus or its adnexa.

In those cases in which it is sought to make a diagnosis by therapeutic or diatetic tests, the method of synchronous variations is utilized.

As an illustration of these methods, the following case reports are appended:

Three years ago I was called in consultation to see a patient in the northern part of the State. He was a lawyer, 57 years of age, and was suffering from an attack of hiccoughs which had continued six days. Otherwise there was freedom from any significant symptoms and the problem in diagnosis was narrowed down to the discovery of the pathology and cause of the persistent hiccoughs. The attending physician had a very complete clinical

history. It showed that the present illness began ten days previously with nausea, vomiting, dizziness and a slight rise of temperature and intestinal stasis. After two or three days these symptoms subsided and the hiccoughs began and continued night and day during waking and sleep for six days. It is unnecessary to give here the full personal or family history and only those that seem to be of interest will be given.

The patient had a nervous temperament; was an indefatigable worker and had achieved considerable success in his profession.. With the exception of certain so-called heart spells, he had always been fairly healthy. For years he had been subject to very severe attacks in some way connected with the heart and characterized with tachacardia, and great prostration. During the attack they thought that he would die, but when it was over his physicians and consultants were unable to discover any organic heart lesion. In the present illness, however, there was no abnormal cardiac condition; the pulse was between eighty and ninety and of fairly good quality. There was no evidence of sepsis in or about the tonsils. Physical examination of the abdomen did not reveal any signs of abdominal disease. His physicians were inclined to believe that there was some pathologic condition in the abdomen responsible for the hiccoughs and they favored an exploratory operation. An X-ray had not been obtained, and it might have furnished some additional proof. The urinalysis was negative.. There were no indications of syphilis and the nervous system seemed to be free from any lesion.

The clinical and other data having been collected, it remained to apply some method of utilizing them to arrive at a diagnosis.

Hiccoughs are not definitely pathonomonic of any one pathologic condition, but taken in conjunction with the fact that the patient had a somewhat weak digestion, they suggested some gastric derangement. Beyond this mere suggestion, the pathognomonic method warranted no diagnostic conclusion. The pathognomonic picture might have been made more specific had there been an X-ray, but this was not available. An exploratory laparotomy would have provided definite information, but one hesitates to operate for exploratory purposes when there is entire absence of any sign or symptoms of some surgical condition.

The clinical history was gone over in search for any data that might provide an *immediate succession.*

It was discovered that the present illness began the day the patient arrived home from a trip to California. Shortly after his arrival his home caught fire and he became much excited and perturbed. That the illness with nausea, vomiting and prostration began that evening. Nothing could be found in his diet to account for the attack.. Insofar as the circumstances surrounding the onset were concerned, nervousness would seem to be the primary factor in the pathology, but this did not seem to be a satisfactory explanation for the continuation of the hiccoughs.

A second inquiry into the clinical history revealed a detailed account of the heart attacks from which he had occasionally suffered.

It developed that the family knew that these attacks reached their most severe stage when vomiting developed. Thereafter the patient began to improve.. Here was an instance of immediate succession, viz: vomiting followed by improvement in the symptoms. In other words, the removal of stomach contents by the natural process of vomiting was the circumstance that was immediately succeeded by the restoration of normal conditions. It was therefore concluded that in the case of the heart attacks, the presence of bile-stained fluid in the stomach was to some extent an etiologic factor.

This conclusion was far from a complete diagnosis in the present instance, but it provided a key to the situation. It suggested the probability that the attacks of hiccoughs were due to a factor similar to that present in the heart attacks.

In the strength of this probability, gastric lavage was ordered and about a half pint of dark fluid obtained. The hiccoughs immediately ceased and did not return for about three hours. The lavage therefore was to be repeated every three hours or as often as indidcated by the return of the hiccoughs. After about forty-eight hours they did not return again. Here we have the presence of bile in the stomach immediately followed by hiccoughs, repeated a number of times and furnishing practical proof that the one was the cause of the other. This man recovered his usual health rapidly and has, I believe, retained it to the present time. Nevertheless, it is quite obvious that the diagnosis is far from complete. I have ventured to report this case at some length in order to illustrate the method of diagnosis named herein "The Method of Immediate Succession."

Case 2. "Mrs. P. R." first came under my care for the relief of severe abdominal pain. The patient was a married woman forty-seven years of age. She had one child, now aged about twenty years; no miscarriages. She seemed well nourished, but was of a highly nervous temperament. She was taken suddenly with a severe pain in the abdomen about an hour after her mid-day meal. The pain was so violent and sudden in its onset that she fell on the floor moaning with agony. By telephone I recommended the application of heat and half dram doses of paregoric till relieved or until I could see her. I saw her about one and one-half hours after the onset. Her husband had carried her to bed and she was lying on her left side, her thighs flexed on her abdomen. The pain continued and she moaned with each respiration. The abdomen was quite rigid, pulse ninety-five, temperature 99.5, no nausea, no vomiting. She said the pain seemed to be more in the left side than on the right and seemed to be in the region of the stomach, but she could not locate it definitely. She had never had an attack in any way resembling the present illness. Morphine was administered and a brief history of the case taken. She had suffered for several years from what she considered some form of disease of the stomach. She said she was often afraid to eat, but also said that the taking of food did not cause definite pain. She suffered with very stubborn, chronic constipation. Any unusual exercise caused shortness of breath and she was subject to frequent spells of faintness, but did not often actually faint. She had suffered at times with inflammation of the tonsils.

For several days before the onset of the severe pain she said her stomach had troubled her very much and she had reduced her diet to a little fluid

nourishment. However, she maintained that there was no actual pain in the stomach even after eating, but only a sort of distress and she was afraid to eat.

Here then we have a woman aged 47 years, suddenly taken with severe pain and giving a history of some indefinite form of gastric disease, with chronic constipation, and with a history of shortness of breath on exertion, and frequent attacks of fainting. It is obvious that a prompt diagnosis was urgent. The patient was removed to Providence Hospital at once, as the symptoms suggested the possibility of the presence of some surgical lesion. While the clinical picture could not be considered absolutely pathognomonic, it suggested some pathologic condition of the stomach, possibly a perforating ulcer. The history of chronic gastric symptoms, the severity and sudden onset of the pain and its location, all went to make up a fairly suggestive picture of a perforating gastric ulcer. However, there was the absence of vomiting and nausea, and the pulse and general condition did not exhibit the degree of collapse that I had seen in other cases of perforation. It was the absence of these symptoms that caused me to defer operation until more specific symptoms or signs could be obtained. The pain was moderately controlled with morphine, and blood examination, urinalysis and an X-ray of stomach ordered. The blood showed a decided increase in leucocytes; urinalysis was negative; and the X-ray a pronounced hourglass contraction. The latter seemed to strengthen the diagnosis of perforating ulcer.

However there were no indications in the X-ray picture of a perforation. These examinations were completed in sixteen hours after the onset of the pain, but by that time the pain had become localized on the right side in the region of the gall bladder which had become quite tender on pressure. The pulse was improved, temperature about one hundred, no abdominal distension and the picture of perforation was therefore distinctly less marked than on the first examination. In consultation with other surgeons, we decided that notwithstanding the primary symptoms, the case was probably gall-stone colic. This new diagnosis was confirmed by a laboratory report stating that a number of small concretions were found by examination of the feces.

Accordingly we had a tentative diagnosis made at the onset of perforating gastric ulcer, not sufficiently strong to proceed to operation, but nevertheless to some extent confirmed by X-ray examination. Then after certain changes in symptoms and by the course of the disease, we are constrained to abandon this diagnosis and conclude the case is gall-stones; this diagnosis being confirmed by the finding of concretions. These concretions were later examined by the technician of the laboratory and found to consist of bismuth subnitrate.

The method used in both these diagnoses was the pathognomonic. In both instances the clinical picture was to some extent confirmed by laboratory findings.. We hesitated to operate at first because the pathognomonic picture was defective and incomplete, and later on because although we felt more assurance that there was gall-bladder disease, the patient was improving and an examination of the heart seemed to indicate that the patient would not endure a severe surgical strain. It was considered also that in addition to the gall-bladder trouble there was also a gastric lesion that might need attention. For these reasons the operation was not performed.

The patient continued about the same for ten days. Temperature about 100 degrees; pulse 90 to 100, moderate pain in the region of the gall-bladder and some distress in the whole upper abdomen. She was able to take a little nourishment, the bowels were very constipated and cathartics and enemata were necessary. On the tenth day hemorrhoids developed and became very painful and distressing, so that it was almost impossible to obtain an evacuation of the bowels.. After several days of intense suffering, piles were removed under ether anesthesia. The operation took fifteen minutes, but the patient took an anesthetic badly. However, she made a good recovery and thereafter was free from rectal trouble, the bowels moving with mild laxatives and without pain.

About one week after the operation the patient suddenly developed paralysis of the muscles on the left side of face and of the left arm. There was also absence of pulse in the left radial artery, and considerable swelling developed in the left side of the neck. The pulse gradually grew more rapid and respirations more labored and the patient died about three weeks after the onset of the disease. Before she died a diagnosis was made of embolus in the left subclavian artery, and of pneumonia in the base of the right lung.

A very thorough and complete autopsy revealed the following conditions:

(1) A large ulcer in area as large as a nickel in the left ventricle of the heart, and several scars on the mitral valve and other portions of the left ventricle indicative of previous ulcers.

(2) A large embolus in the left sub-clavian artery.

(3) A large subphrenic abscess containing more than a pint of pus. The diaphram on the right side was pushed upward into the pleural cavity.

(4) The lower lobe of the right lung was solid and studded with many infarcts.

(5) The stomach was absolutely normal, no signs of ulcers, scars or contractions.

(6) The gall-bladder was normal, no gall-stones present.

(7) The rectum was free from any signs of infection and healing was progressing normally.

(8) There was absolutely no signs of any abdominal disease.

It was the opinion of the pathologist who performed the autopsy that the cardiac ulcer was the primary pathology. It was probably responsible for the infection that lead to the subphrenic abscess.

The embolus is the subclavian artery was either from the pulmonary or pleuritic infection or directly from the cardiac ulcer.

The severe pain that marked the sudden onset of the disease was very probably a diaphramatic pleurisy.

It is noteworthy that the diagnosis of perforating gastric ulcer and later the diagnosis of gall-stones were both founded upon pathognomonic syndromes and were both absolutely erroneous.

Had the clinical history of this patient been thoroughly investigated and the circumstances demonstrated that the fundamental pathology in her case was ulcerative endocarditis and not gastric disease, it is possible that the nature and

source of the initial pain would have been disclosed. The knowledge that the cardiac ulcer was succeeded by the acute pain would have afforded a basis for the application of the method of Immediate Succession.

Notwithstanding the great advancement of the medical sciences in modern times, diagnosis of the diseases of the abdomen is erroneous in a large proportion of cases. It occured to the writer that to some extent the responsibility could be traced to fallacious conclusions that might be avoided by a clearer knowledge of the four methods of inference employed in the diagnoses of these cases. By years of experience one gains familiarity with these methods, but the recent graduate in medicine is often hopelessly submerged by the multiplicity of clinical and laboratory facts and is at a loss to know how to make use of them.

It would seem that in the curriculum in medicine there should be included along with physical diagnosis, instruction in methods of diagnostic inference. Such a course would promote accuracy in reasoning, would train the judgment in the valuation of clinical data, would supply the greatest incentive to a student of medicine to make purposeful and systematic clinical histories, and would supply him with conscious instruments of inference in diagnosis.

A better knowledge of these methods of inference and of their restrictions and attending fallacies would stay the hand too ready to operate, and would provide the necessary conviction to the conscientious surgeon.

LABYRINTHITIS—REPORT OF CASES IN ACUTE SUPPURATIVE OTITIS MEDIA AND AFTER OPERATIONS.*

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Of all branches of the surgical art—general and special—otology has perhaps made proportionately the greatest advance in the last two or three decades.

From very little a quarter of a century ago, otology has developed into a very respectable department of surgery, showing to its credit not a few epoch-making advancements which have resulted in much good to otologic patients and at the same time redounded much to the credit of the otologist.

No one can deny the very great good which has followed in the wake of intratympanic surgery, and none will gainsay the brilliancy of achievement in mastoid surgery which, beginning with Wilde's incision, progressed to the gimlet-hole openings of the early mastoid operators, and finally came into its own in the classical simple mastoid operation and the more pretentious radical tympano-mastoid exenteration.

One can think only in terms of highest commendation for those who, like Schwartze, Stacke, Politzer and Sebenmann, on the Continent, McEwen in Glasgow, Balance in London, and McBride in Edinborough: Dench, Randall, Beck and a host of others in our own country have been pioneers and early builders in this most fascinating Otologic Surgical Structure.

These men and their co-workers have not been content to limit their field of endeavor to the narrow confines of the tympano-tubo-mastoid region, but early turned their attention to the complications and sequelae of temporal bone sepsis and a far greater area of usefulness was soon uncovered, thus intracranial and neck suppurations fell naturally into the otologist's sphere of usefulness, and it was not long before the untiring diligence which had made of that *terra incognita,* the mastoid, a clearly charted field had also explored every nook and corner of the adjacent areas—anatomically and pathologically, and we have Bezold's perforation—superficial and deep cervical abscess—internal jugular vein thrombosis with its accompanying glandular involvements in the neck, and still wider afield, the multitudinous manifestations of a general pyaemia as sequelae of temporal bone infections.

What more brilliant achievements in surgery can be found than that which has fallen to the otologist in his investigation of the various intra-cranial complications of temporal bone sepsis, where such important pathologic entities as extra and intra-dural abscess, perisinus abscess, sinus thrombosis, deep brain abscess and meningitis have fallen to his lot for investigation, diagnosis and surgical management?

About when these fascinating problems of otology, which I briefly mention here to show the really broad surgical foundation upon which otology rests, had become fairly well investigated from the pathologic, clinic and surgical viewpoints and affairs otologic were apparently becoming well settled, along came the Vienna School, including Urbantschitsch, Barany, Alexander, Naumann and Ruttin with a whole batch of new and absorbing problems as touching the various pathologic processes in the internal ear.

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An immense and ever widening field was soon opened and, not yet, are many of the labyrinthine problems which form the subject of this communication at all well understood by the bulk of those who call themselves otologists.

The labyrinth, composed of the vestibule, the cochlea and semicircular canals, bony and membranous, in its small area presents more baffling problems than are perhaps to be found in any other anatomic division of the human body. The Vienna School of Otologists has evolved, from thorough anatomic and pathologic studies and from clinical data, a classification which is at once simple, comprehensive and understandable, and furthermore, any known pathologic manifestation of labyrinthine origin can be made to fit into it.

Ruttin, in his monograph "The Labyrinth," gives the following classification of labyrinthitis:

(1) Circumscribed labyrinthitis.
(2) Diffuse serous secondary labyrinthitis.
(3) Diffuse purulent manifest labyrinthitis.
(4) Diffuse purulent latent labyrinthitis.
(5) Traumatic labyrinthitis.
(6) Serous induced labyrinthitis.

These six divisions are more or less phases of one process, and in the course of events a circumscribed labyrinthitis may become a diffuse serous secondary labyrinthitis and the latter may in its turn become a diffuse purulent manifest labyrinthitis, the quiescent end-result of which may, if the patient survives, be a diffuse purulent latent labyrinthitis.

Traumatic labyrinthitis may become purulent, as may also serous induced labyrinthitis.

From a surgical standpoint as bearing upon the question of the necessity for immediate surgical opening of the labyrinth, the diagnosis of the advent of a diffuse purulent manifest labyrinthitis is all-important, and this diagnosis is made, not by the general manifestation of disease as shown by the temperature, pulse, blood picture or general condition or subjective symptoms presented by the patient, but by the entire absence of all labyrinthine reactions in the affected ear. Hearing is abolished. The turning test shows disharmony and there is an absence of the caloric and fistula reactions. The exact meaning of the galvanic reactions is as yet somewhat obscure.

It is true that the diagnosis between a diffuse purulent manifest labyrinthitis and some cases of diffuse serous secondary labyrinthitis is not possible, as the latter may have a complete abolition of all labyrinthine reactions, but in such a case the surgical procedure must be as in diffuse purulent labyrinthitis.

The outstanding diagnostic point is that as long as any labyrinthine reaction is present the labyrinth operation can be safely held in reserve, but as soon as all labyrinthine reactions are abolished, then the labyrinth must at once be opened. The one pathologic state that forms an exception to this rule is where, there is a completely ossified labyrinth. The latter condition is to be diagnosticated by the establishment of so-called compensation which is shown to exist by an equalization of the after nystagmus following turning to the right and left. There is a reduction in both, say to twelve seconds, but both are equal.

The cases of labyrinthitis which I shall report in this communication are few in number and do not fall under the most common headings of the classification of this disease as given above, there being two cases of serous induced labyrinthitis in acute suppurative otitis media, one case of diffuse serous secondary labyrinthitis in the sixth week of healing after a simple mastoid operation, and two cases of traumatic labyrinthitis following the radical mastoid operation.

Inasmuch as in all these cases the labyrinthine activity as manifest by hearing, caloric or fistula reaction never became extinct, in none was it deemed necessary to do the labyrinth operation, the simple mastoid or the radical operation being sufficient to bring about a return to health.

In those cases which show a complete abolition of labyrinthine function the operation of choice is that one, given to us by Naumann, which involves:

1st, A complete radical tympano-mastoid exenteration.

2nd, The outlining of Trautmann's triangle.

3rd, In cases where the sinus is well forward the exposure of the dura in Trautmann's triangle. If the sinus is far back and the floor of the middle fossa does not overhang, dural exposure here may be avoided.

4th, Undermining the facial ridge and the external semicircular canal and entering the vestibule from behind.

5th, Entering and enlarging the oval window, when a delicate probe can be introduced into the oval window and be made to appear posterior to the facial ridge, the vestibule has been sufficiently opened for purposes of drainage.

6th, Removal of the promontory to expose the interior of the cochlea.

7th, The complete Naumann procedure, which involves the removal of the petrous pyramid to the intracranial orifice of the internal auditory canal is reserved for such cases as already show symptoms of meningitis.

REPORT OF CASES.

Case 1. Mrs. S., aet. 49. Extensive epithelioma of external auditory canal and tympanic cavity. Radical operation. Traumatic labyrinthitis. Recovery. Later, death from malignant disease.

This patient presented an extensive epithelioma of the external auditory canal which had extended to the middle ear and antrum. An attempt had been made to remove this growth through the external auditory canal, which had met with failure.

A radical tympano-mastoid exenteration was determined upon and was done very thoroughly.

In the course of following the ramifications of the disease the horizontal semicircular canal was wounded. Immediately upon recovering from the anesthetic the symptoms of violent labyrinthine disharmony were present, viz., intense vertigo, nausea, vomiting and nystagmus of the third degree toward the good ear. There was also the characteristic decubitus, the patient lying on the well side.

From day to day these symptoms became milder, and had entirely disappeared by eight or ten days. This patient finally died from metastatic cancer.

Case 2. Mrs. V., aet. 37. Chronic suppurative otitis media. Large polyps, foul discharge. Hearing present but depreciated. Caloric test present but delayed on account of polyps. Fistula test absent. Middle ear suppuration had lasted for eight years. There had been no attacks of vertigo.

A complete radical tympani-mastoid exenteration was done. Posterior wound closed by Panse flap. Immediately upon recovery from the anesthetic this patient had vertigo, vomiting, nausea, loss of equilibrium and rotatory nystagmus to the healthy ear. Hearing was much reduced but not abolished. She assumed the characteristic decubitus.

In forty-eight hours the symptoms were much improved and in six days entirely gone.

The case has progressed to a complete recovery in the usual way.

In this case the injury was done to the foot plate of the stapes in the oval window.

The point of greatest diagnostic value is the immediate appearance of symptoms of labyrinthine disharmony upon the recovery from the anesthetic, because a secondary manifest serous labyrinthitis following a radical operation will not show itself earlier than thirty-six hours after the operation. No further surgical interference should be done if improvement of symptoms are shown from day to day.

The treatment consists in keeping the patient in bed and giving bromides internally. Perhaps they may modify the intensity of the symptoms.

The prognosis is good if the process does not develop a purulent manifest labyrinthitis, in which case the labyrinth should be at once opened for drainage.

Case 3. C. F., aet. 30. Serous induced labyrinthitis occurring suddenly on fifth day of an acute suppurative otitis media. Simple mastoid operation. Recovery. This patient was admitted to Harper Hospital at 8 a. m., Dec. 27, 1915.

The patient complained that three days previously his left ear began to ring and feel deaf and full and that his throat was painful when he swallowed. He soon began to have severe pain in the ear and his medical man incised his ear drum on the second day.

Upon admission to the Hospital the left external auditory canal was filled with pus. Canal wall red, and swollen. Tympanic membrane thick, red and bulging. Mastoid was much swollen and extremely tender to the touch. Cervical gland swollen on left side. Under gas anesthesia the drum was again freely incised. X-Ray examination showed cloudy mastoid cells.

Bacteriologic examination of pus from the ear showed a pure culture of the streptococcus.

Temperature on admission was 99.4°, pulse 104. At noon of the same day the temperature reached 101° and the pulse 120, which was the highest points reached during his eleven days stay in the hospital, and here I want to draw your attention to the fact that this time antedated the advent of the labyrinthitis by thirty-six hours, and that during the time of the labyrinthine disturbance the temperature was at its highest 100.2°, and that only for a short period. This serves to illustrate the fact that the temperature is of but little value, diagnostically, in labyrinthitis.

At 9 p. m. on Dec. 27, one-half cubic centimeter strepto-pneumococcic-sero-bacterin was given hypodermically. At 10:30 the patient vomited, was greatly nauseated and complained of vertigo. Had a poor night. On the morning of the 28th of December, temperature was 98.8°, pulse 104, nauseated and vomiting. Slight spontaneous nystagmus to the right of first degree. After gastric lavage and mustard to the epigastrium, felt much relieved.

An interesting question arises here bearing upon the influenee, good or bad, of a vaceine upon temporal bone infeetions.

Is the sudden onset of labyrinthine symptoms in this case one and one-half hours after the hypodermie injeetion of a vaccine to be looked upon as a violent foeal reaction, or was the involvement of the labyrinth in the area of edema surrounding the foeus of infeetion merely the natural result of the violent form of infection present.

An interesting question it is, and, it must be conceded, one not easy of plausible solution, indeed it seems quite impossible to be definite about it.

However, the one fact of the very quick appearance of symptoms of the labyrinthitis would make one skeptical as to the role played by the vaceine.

Ninety minutes would seem to be too short a time for a violent foeal reaction to show itself. Also, thirty-six hours after the injection the symptoms were all much aggravated, and further, they promptly disappeared when the

collateral edema was removed by the good drainage incident to the performing of a thorough simple mastoid operation.

When seen at 8 a. m. December 29th, 1915, the patient said he had had a poor night, nauseated, vomiting, vertigo much increased, with much more marked rotatory nystagmus to the right, mastoid tender. External auditory canal filled with pus. At this time the functional test of the labyrinth showed it to be active, as follows:

1st, With exclusion apparatus in right patient could hear loud words *ad concha.*

2nd, Syringing with very hot water modified the rotatory nystagmus.

3rd, Fistula symptoms not present.

4th, Turning test not employed on account of the patient's condition.

In view of these findings an immediate operation was done.

The operation decided on was a very complete simple mastoid exenteration.

The mastoid cells were found completely broken down and filled with pus. Within twenty-four hours all labyrinthine symptoms had disappeared, and while the patient was restless for a few days, his recovery was uninterrupted and he left the hospital on the eleventh day.

I wish to call your attention to the graphic temperature and pulse chart of this case, as it illustrates what extensive and serious pathologic changes may be going forward in the temporal bone with but comparatively little temperature elevation.

The pulse, however, shows more departure from the normal than does the temperature.

Case 4. Mrs. E., aet. 60. Serous induced labyrinthitis occurring on second day of acute suppurative otitis media. Simple mastoid operation. Recovery with diminished hearing, persistent tinnitus and slight vertigo.

This patient was admitted to Harper Hospital on the third day of her otitis media. Mastoid tender. X-ray showed cloudy mastoid cells. Bacteriologic examination of pus showed a mixed infection of pneumococcus and streptococcus.

The labyrinthine functions were not abolished. A spontaneous rotatory nystagmus to the well side was present. There were also vertigo, nausea, vomiting. Temperature never went above 99° and pulse 90. A simple complete mastoid operation was done. The nystagmus, nausea and vomiting gradually disappeared and the patient left the hospital on the sixteenth day.

At the end of six weeks the mastoid wound had healed, ear became dry. Hearing, however, has never become normal, and there is now, after seven months, considerable vertigo but no nystagmus.

It would seem that, in view of the incomplete recovery of labyrinthine function in this case, that there probably must have been more than an induced serous labyrinthitis present.

Case 5. Mr. V., aet. 43. Diffuse serous secondary labyrinthitis on thirty-sixth day of healing of simple mastoid operation. Radical operation. Recovery.

This patient's first admission to Harper Hospital was on March 12, 1916, at which time he gave the following history: Two weeks ago contracted a severe cold. Sore throat followed and ten days ago earache began. Eight days ago ear drum ruptured spontaneously, followed by profuse discharge but no relief from pain. Mastoid became swollen and tender. Present condition shows right ear discharging freely and right mastoid swollen and very tender to touch.

X-ray.—"Plates were made of both mastoid regions. The cells are well developed on both sides. There is not much evidence of involvement of the right cells. The bulk of these are pneumatic, and the only change evident is a slight cloudiness in the region of the antrum."

Urinary Analysis.—Normal urine.

Blood Picture.—

Reds	4,500,000
Whites	12,000
Haemoglobin	90%
Polys.	75%
Small	16%
Large	8%
Eosin	1%
	100%

Polymorphonuclear leucocytosis.

The graphic chart of this case is before you for pulse and temperature.

On March 14, a complete simple mastoid operation was done at which time more destruction of the cellular elements of the mastoid was found than one would judge from the skiagraphic pictures.

This patient remained in the hospital for fifteen days.

The healing seemed to be progressing in the usual way until May 12, when the patient complained of pain in the mastoid region, and a general want of well-being.

On May 13th I was called hurriedly to this man's home and found him confined to his bed lying on his left side, nauseated, vomiting, with vertigo, and intense rotatory nystagmus to the left.

He was readmitted to Harper Hospital and put to bed for observation.

It was found that his vertigo, vomiting and nausea were persistent, that his nystagmus was increasing in severity and that his labyrinthine functions were active, he could hear loud conversation with the exclusion apparatus in the left ear. The fistula symptom was present, compression diminishing the intensity of the spontaneous nystagmus. Hot water did the same thing.

In view of the above findings, a radical tympano-mastoid exenteration was decided upon and done on May 18, 1916.

His labyrinthine symptoms became immediately much improved and by the fourth day after operation had entirely disappeared. This man remained in the hospital until June 12, 1916.

He has made a complete recovery. The graphic chart of his pulse and temperature is also before you. By it you will see that during the period of labyrinthine activity it was but little disturbed.

Points of real interest are:

1st, The workable classification of Ruttin.

2nd, The conception that all these types may run the one into the other.

3rd, The diagnosis of purulent manifest labyrinthitis by the entire absence of all labyrinthine reactions.

4th, The recognition of the necessity for making drainage of the labyrinth part of the surgical procedure when there is an absence of all labyrinthine reactions.

5th, The exception to the rule laid down in the fourth section, and the means at hand to make the diagnosis of the existence of "compensation."

6th, When compensation has become established, the recognition of the fact that there may be ossification or there may be sequestration of the labyrinth and the widely divergent surgical necessity in each—the former is left alone; the latter exenterated.

7th, The realization of the necessity for promptly draining the labyrinth when all labyrinthine reactions are abolished in acute cases.

8th, The realization of the necessity for making the labyrinth operation part of the surgical procedures when the radical operation is done for chronic suppurative otitis media in the presence of a dead labyrinth as shown by the entire absence of all labyrinthine reactions.

REPORT OF A CASE OF ABDUCTOR PARALYSIS WITH REMOVAL OF ONE VOCAL CORD.*

Chas. H. Baker, M.D.
Bay City, Mich.

The following case illustrates the difficulty which may accompany the diagnosis and selection of appropriate treatment in paralysis of the abductor muscles of the vocal cords, also the scarcity of details in the published literature which might serve as a guide to the man confronted with the responsibility of such a case.

Joe S., a Polish boy 9 years of age, was brought to me suffering from obstructed breathing, with cough and dyspnoea when lying down. No satisfactory history of the beginning of the trouble could be obtained owing to the inability of the accompanying attendant to speak English.

Large tonsils and adenoids were present preventing any view of the vocal region and sufficiently obstructive to account for most of the symptoms noted.

Accordingly both were removed under general anesthesia with no more trouble in the administration than usually accompanies the presence of enlarged tonsils. This was near the end of July and the trouble in breathing dated from the previous March.

He was brought again September 15, six months from the commencement of his trouble and this time the history elicited that when first attacked, he had a sore throat, which lasted about ten days, and was very weak, but did not go to bed. There were other children sick in the school with sore throats but none died and no physician saw them, so no diagnosis was made.

Three weeks after the onset of his illness he was attacked by hoarseness, a brassy cough and had repeated attacks of dyspnoea which were worse when lying down to sleep.

In the light of this history and the subsequent developments in the case, a tentative diagnosis of diphtheria and post-diphtheritic paralysis was made.

At this visit he had a harsh rasping cough and could articulate with the greatest difficulty in a high falsetto voice. Inspiration was so difficult as to cause marked suprasternal and epigastric retraction.

There was marked cyanosis and the tidal respiration sounded like that of a case suffering with laryngeal diphtheria.

With the larynx well cocainized an attempt was made to see the condition of the vocal bands but this was impossible as the epiglottis overhung too much and with each effort at inspiration it folded on itself like the palm of the hand going into a tight glove.

One attempt to intubate was made under local anesthesia and two at broncoscopy under profound general anesthesia but without success.

The smallest size broncoscope tube would not pass without force enough to lacerate the tissues. Skiagraphs, with fine definition, failed to show the presence of a foreign body in the air passages or a tumor pressing on the recurrent laryngeal nerve.

Under quiet, rest and good diet in the hospital together with potassium iodide alternated with strychnia the dyspnoea lessened and the general condition improved so that he was allowed to return to his home, only to return, in less than a week, worse than before. The third night afterwards I was compelled to do a tracheotomy to save him from death by suffocation.

With the improved aeration following the tracheotomy his condition improved amazingly; he grew to like the tracheotomy tube and to remove and replace the inner tube for cleansing.

After a few days, when granulations had formed well about the tube, the double one was replaced by a single of slightly lesser calibre fenestrated on the convex curve, for the purpose of encouraging him to try to breathe through the normal passages.

Systematic training was now begun to overcome the spasms of the pharyngeal muscles and allow a view of the vocal cords. About the third week this was accomplished and the left cord was seen lying in the median position while the other was nearly in the cadaveric position.

On attempting phonation the left cord remained immovable while the other passed over it and rose above at an angle of about fifteen degrees. At no subsequent examination could the glottic chink be seen as the cords lay either in contact or overlapping thus accounting for the difficult breathing.

The cords were like two flabby wet valves of

*Read at the Fifty-First Annual Meeting, M.S.M.S., Houghton, Aug. 15-16-17, 1916.

wash-leather with overlapping edges and the greater the inspiratory effort the closer did they close the larynx.

The patient's home was in the country, miles away from any physician and the family too poor to keep him in the city where I could watch him, and the county officials refused to become responsible for his care.

Rather than condemn him to a lifetime of wearing a tracheotomy tube, it was decided to remove one cord to insure a safe breathing space and by leaving the other to give him all possible chance to establish whatever compensatory action was possible in case the cord should regain any of its function.

The endolaryngeal route offered no chance for the cutting punch forceps because of the failure of the attempts at passing the small bronchoscope tube so nothing but laryngo-fissure seemed left to do.

Accordingly the patient was anesthetized with a mixture of one part chloroform and two parts ether vaporized with a hand ball atomizer and inhaled through the tracheotomy tube.

The skin was incised from the thyroid notch to the cricoid cartilage, hemorrhage controlled and the two cartilages incised in the median line. The blood was kept from entering the trachea by packing gauze into the trachea around the tube and the cut edges retracted with single sharp hooks. This brought the paralyzed cord into view and with scissors it was removed together with the corresponding arytenoid cartilage.

The divided cartilages were united with buried sutures and the overlying skin with interrupted silkworm gut.

Healing was without discharge except at the lowest skin suture which became slightly infected by the secretions from the first tracheal wound.

Nothing was placed within the larynx to prevent adhesions because only a strip of bare surface a quarter of an inch wide on the site of the removal was left bare and this was opposed to intact mucous membrane which was in constant motion during respiration.

A few days following the operation the inner tracheal cannula was removed and the outer one provided with a cork which the patient was encouraged to wear as constantly as possible, breathing through the fenestrum on the back curve of the tube and the natural passages.

This he was able to do most of the time in the daytime but could not do at night, for even when he fell asleep with the cork in he soon awakened and had to have the cork removed.

Granulations from the cut edge of the tracheal wound, forming in and blocking the fenestrum—it was found necessary to close it and make a new one lower down and more in line with the bottom of the tube.

After this was done the patient wore the cork in his tube all day; could sleep half an hour at night with it in but wakened and insisted he could not go to sleep again with it in. The laryngo-fissure was done three weeks after the tracheotomy and at the end of eight weeks more the site of the cord removed was seen by indirect inspection to be a half funnel shaped white scar extending downwards from the ventricular bands to the subglottic space. The voice, although hoarse and rough had become quite useful, being of about the normal pitch and loud enough to be heard a distance of thirty or forty feet.

Five weeks after the operation the tube was removed in the morning and the opening sealed externally but by the latter part of the afternoon it had to be replaced which was done with considerable difficulty as it was showing a marked tendency to heal.

The attendant dyspnoea seemed to be induced by fear of not being able to breathe.

Three weeks later the tube was again removed and loose gauze placed over the opening through which the patient could breathe until the opening closed of itself. The patient slept most of the night with occasional wakening.

The opening had fully closed by the following day and that night patient slept the entire night, which he continued to do during the ten days longer that he remained in the hospital.

RECAPITULATION.

At the first visit no history could be obtained and the existent symptoms could easily be due to the adenoids and tonsils which were removed. At the second visit the symptoms were those of more complete obstruction and the obtainable history pointed to an unrecognized diphtheria as a possible cause. The X-ray was negative and the impossibility of passing the vocal cords or of adequately inspecting them suggested some cicatricial adhesions which the history gave no support.

Tracheotomy was forced upon us and the subsequent treatment was largely the effort to escape the wearing of the tube indefinitely.

Although the tracheal tube can be worn a long time safely, in one case reported twenty-four years, still one would hesitate to condemn a patient to the discomfort and possible danger in its continuous use.

Removal of the cord has been suggested and tried but the writers I found mentioning it did not recommend it and had not tried it themselves. Their objections were not stated except as to the effect on the voice. This I do not consider a valid objection in cases similar to this because before the operation only a violent effort produced a thin squeak not audible more than ten feet and thus of no practical use.

Had he been left with only a whispering voice and still have escaped the tube and been free from the danger of suffocation it was worth the trial.

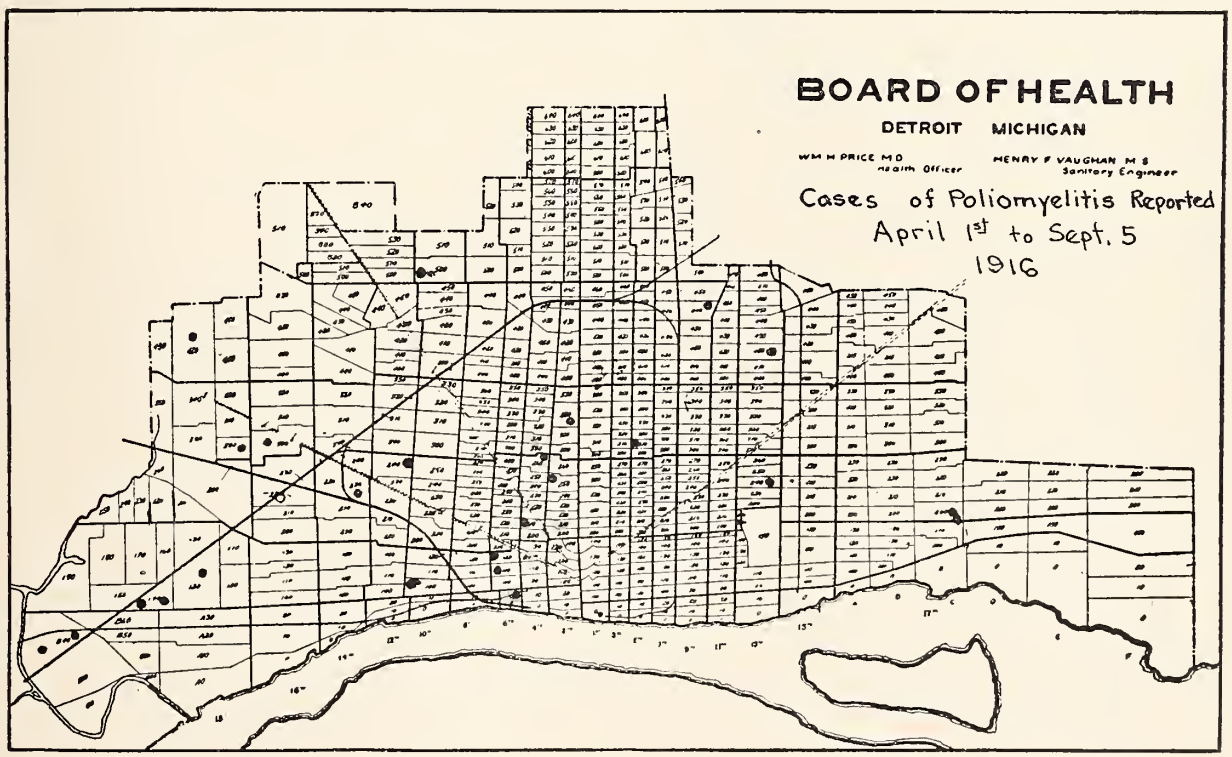
THE POLIOMYELITIS SITUATION IN DETROIT.*

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Since July 1, 1916 there have been reported to the Board of Health 21 cases which have been verified as cases of anterior poliomyelitis; infantile paralysis, "Heine-Medin disease," spinal infantile paralysis or "poliomyelitis anterior acuta" as it is variously called. Owing to the large amount of publicity given to this disease by the newspapers, the medical profession and the people altogether are on the lookout for such cases. We therefore feel that a greater percentage of such cases have been reported to the Board of Health than in previous years. In all there have been reported ninety cases by physicians as being suspicious of this disease. Of such reports only twenty-one were found to show evidence of the disease. Compare this with reports of suspicious scarlet fever or diphtheria cases where Board of Health diagnosis verified that of the reporting physician in four out of eighteen instances in diphtheria and twenty-six out of fifty instances in scarlet fever for the same period.

The source of infection in these cases was in most instances obscure. In two instances the cases had only recently come from other cities one of them one day before and the other one week previous. In another instance a girl of 11 years developed the disease six days after a child of fourteen months living in the same house had been removed to the hospital with poliomyelitis. This child had played with but three other children none of which has as yet developed the disease although one of these three had a marked intestinal derangement without any sign of paralysis. On the other hand the method of spread of infection in some cases was very obscure. Several mothers averred that their child had not left the house from two to four weeks before the onset of the disease.

No evidence of milk as a carrier or of flies or of other insects as carriers could be concluded. With the one above mentioned exception, no connection between any our cases one with another could be obtained.



The accompanying map shows the location of such cases:

Because of such indefiniteness as to the source of the infection no definite date as to the period of incubation could be obtained. I saw one case, a doctor's daughter (in Windsor), which developed forty-eight hours after the doctor had attended a previous case. The other definite case showed a period of incubation of seven days.

The onset in three of the cases was described as sudden and paralysis of some sort developed within twenty-four hours. On the other hand eighteen cases had prodromal symptoms from

*From the Detroit Board of Health, Department of Communicable Diseases.

SERIES OF 21 CASES

Case No.	Type	Age	Sex	Date of Onset	Vomiting	Diarrhea	Constipation	Sore Throat	Day of Paralysis	EXTENT OF PARALYSIS					Pain	Tenderness	Temperature	REFLEXES		Other Child'n in Family	COURSE OF DISEASE	REMARKS
										R.L.	L.L.	R.A.	L.A.	Face				L.L.	R.L.			
1	S	2	F	7-7	—	=	+	—	2nd	+	+	—	—	—	++	++	100.5	—	—		Improved Rapidly	
2	S	2	F	7-9	+	—	—	—	3rd	+	+	—	—	—	+	+		—	—			
3	S	3	F	7-13	—	—	—	—	4th	--	+	+	—	—						3	Improved Rapidly	
4	S	3	F	7-25	—	—	—	—	2nd	+	+	—	—	—	+	+		—	SL +	3	Improved Rapidly	
5	S	3	F	7-16	+	+	—	—	3rd	+	+	—	—	—	+	+	101	—	SL +		Much Improved	Pain in back marked
6	S	2	F	7-27	—	—	—	—	2nd	--	+	—	—	—	+	+	100	—	SL +		Improved Rapidly	
7	S	5	F	7-29	—	—	—	—	1st	+	—	—	—	—	—	—		+	—		Improved Rapidly	
8	BS	15M	F	7-30	—	+	—	—	3rd	+	+	+	—	L+	+	+	103	—	--		Improved Rapidly	Adrenalin treatment and splints
9	BS	9M	M	8-26	—	—	—	—	4th	+	—	—	—	L+	+	+		+	—	2	Slight Improvement	
10	S	6	F	7-31	—	—	—	—	2nd	+	—	—	+	—	++	++		+	—	2		Died 4th day, Broncho-pneumonia
11	S	6	M	7-30	—	—	—	—	2nd	+	+	—	—	—	++	++		--	—	7	Very Slowly Improving	
12	S	5	M	8-8	+	—	—	—	2nd	+	+	—	—	—	++	++	102	—	—	0		Died 18th day, Meningitic onset
13	S	15M	M	8-9	+	+	—	—	2nd	—	+	—	+	—	+	+		—	+	0		Onset with convulsions and nasal discharge
14	S	16M	F	8-16	+	—	—	—	2nd	—	+	—	—	—	+	+		—	+	1		Somnolence with onset
15	S	2	F	8-16	+	+	—	—	2nd	—	+	—	—	—	+	+		—	+	1	Improved Very Slowly	Spine markedly tender
16	S	1	F	8-21	+	—	—	—	1st	+	—	+	—	—	+	+		+	— RA—	2	8-28 walking well &uses rt. hand	Onset. Falls after 2-3 steps
17	S	3	M	8-12	—	—	+	—	3rd	—	+	—	—	—	+	+		—	+	0		
18	S	21M	F	8-21	—	+	—	—	2nd	+	—	—	—	—	+	+		+	—	0		Had retracted hydrocephalic cry
19	S	15M	F	8-27	+	—	—	—	1st	+	+	—	—	—	+	+		—	+	0	Improving 9-29	Stiff neck at onset
20	S	9	F	8-25	++	—	—	+	2nd	+	+	—	—	—	++	++		—	—		Slowly Improved	Exposed to 14.
21	S	5	M	8-27	—	—	—	—	2nd	+	—	—	—	—	++	+	102.4	+	—	2		Onset with much sneezing

one to four days before the advent of any noticeable paralysis.

In nearly all of the cases there was some form of gastro-intestinal disturbance, nine began with vomiting, in one case at least at hourly intervals for a period of twenty-four hours. Five cases showed diarrhea and two with noticeable constipation.

The degree of fever was variable. Of eight cases more closely observed the maximum temperature varied from 100 to 103 and was of the septic type, usually reaching normal in four to five days after the onset of the disease.

Sore throat was complained of in only one case. This case also showed signs of "throat paralysis." In four cases a history of nasal discharge and a "cold" was obtained. In a few cases sneezing was a noticeable symptom. In another case broncho-pneumonia was present from the onset.

Nervous system symptoms were variable. In twelve cases the child was restless and irritable; in four cases stupor or somnolence was present. In all cases some degree of tenderness of muscles were present. This varied from slight tenderness to the severest pain with the slightest touch. In one case a possible diagnosis of acute muscular rheumatism was suggested, the pain was so severe. In most cases tenderness along the region of the spine existed.

Of these twenty-one cases, fifteen were amongst female children and six male children, their age varying from nine months to 9 years. The greater number of cases (fourteen) were 3 years and under. The cases were all of the spinal type although two showed symptoms of bulbar involvement, one of these a child of fifteen months showing paralysis of the left side of the face and neck and marked asymetry of face, the other showed only slight involvement of facial nerve on left side. The muscles affected were various, of the total of twenty-one cases the lower legs were affected in all instances, the arm or arms in five and the affections of both arms and legs in five. The muscles of the hip were decidedly affected in one case.

On previous page is given a summary of the cases.

Close observation for the symptom described by Draper (that flexion of the spine anteriorly produces pain and stiffness of the neck) showed it positive in four out of six cases.

A peculiar hydrocephalic cry was heard in two cases.

Of the twenty-one cases eight were sent to the hospital. The quarantine has been set as six weeks. Two cases have died, one (case No. 10) in the fourth day of the disease. This case was complicated by broncho-pneumonia. Another case (No. 12) died on the eighteenth day. Post-mortem examination of the lungs revealed a left lobar-pneumonia. Cross sections of the spinal cord showed decided round cell infiltration of the grey matter. (1)

As a routine precedure spinal puncture was performed on all hospital cases upon admittance and repeated as necessary according to the symptoms.

The following is the result of the analysis of fluids obtained: (2)

No.	Description	Sugar Test (Benedict's)	White Cell Count
1	Clear	Positive	Lymphocytosis (no count)
2	Clear	Positive	Lymphocytosis (no count)
3	Clear	Positive	Poly.? Largel. 30% S.L. 70%
4	Clear with much blood	Positive	Poly 2% L.L. 40% S.L. 58%
5	Faintly Turbid	Positive	Poly? L.L. 35% S.L. 65%

The other nineteen cases rapidly improved, in most instances much of the paralysis disappearing in a short period of time. The eight cases received at the hospital were treated by various methods. In two cases, one a mild one and the other a moderately severe bulbar-spinal type, a method after Meltzer (3) of injecting 20 min., of adrenalin intraspinally after withdrawing about 15-20 cubic centimeters of spinal fluid and repeating each eight hours for three days, was used. Both these cases made apparently wonderful improvement. The other hospital cases were treated with rest in bed, rest for the affected parts by the use of well padded splints and the careful use of urotropin

On the other hand the cases not sent to the hospital were treated with early massage usually performed by the mother. It was striking to observe the improvement made in some of the cases which in addition to the massage were urged and to a great extent trained by the ever anxious mother to as early as possible make use of the paralyzed parts by the use of adjacent groups of muscles. Such observation of cases can not help but make one think that a great many cases exist and a doctor is not called and the child makes a practically complete recovery by natural muscle training and massage by the mother.

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THE SERVICE DE SANTE, FRENCH ARMY, OR THE CARE OF THE FRENCH WOUNDED

LEO C. DONNELLY, M.D.
(With the French Red Cross).

Each soldier in the trench has a first aid packet containing a large piece of sterilized ganze in wax tissue paper, two sterile safety pins, a roller bandage, and a triangular bandage upon which pictures of the different methods of application are printed

If he is badly wounded in "no man's land" he lies there and ultimately dies. Unburied dead accumulated since September, 1914 still lie in heaps between the lines. A man wounded in the first line trenches is sent back by stretcher bearers. These stretcher bearers are noncombatants, have special uniforms, and are never taken prisoners. The patient or the stretcher bearer applies the first aid dressing. If it is an officer a doctor may come up to the first line. Bad cases remain in the trench until dark when they make "a run for it," across the open to the rear. The trenches are hardly wide enough for two men to pass, and many sharp angles occur, making stretcher bearing nearly impossible. The patient is taken to a "Place de Sucours" where he first meets a doctor who does the work absolutely necessary. Here arteries are tied, splints applied, and a more substantial dressing done.

The Place de Sucours may be a dug out, a cottage, etc. It is always under shell fire and doctors are often killed. The Roll of Honor shows two to four doctors killed daily in the medical service.

The patients are now carried one or two kilometers back of the trenches, left on the ground, in the shelter of woods, or a hill. The auto ambulances, nearly always at night, carry the patient from this place to the first aid hospital. Ambulance drivers are often young volunteer Americans serving without pay. From four to eight autos, each with a driver and a helper act under a captain and are quartered in small cottages. They work all night, make many trips without lamps of any kind, over roads torn up by shell fire, and are practically always under a shell fire.

The first aid hospital contains from twenty to 150 beds. Some have female nurses.

It is expedient at this point to explain the tagging of soldiers. Each soldier has an oval aluminum tag chained to his right wrist, with his name, class, regiment number, and number in his regiment. His clothing is also marked in the same manner. At the Place de Sucour a red tag attached signifies immediate attention, a blue tag not so serious. At either the Place de Sucour or first aid hospital slightly wounded men may be sent back to the front.

At the first aid hospital he receives 500 units of antitetanic serum. Necessary amputations, abdominal operations and lung injuries are put to bed. Here he gets his second tag, a short history, with treatment and diagnosis. Very severe cases and chest cases remain here until death ends the case or until they can be transferred. Large pieces of shell are removed, plaster casts or aluminum splints may be applied .

From here the patient is removed by ambulance to the railway head. The railway head is practically a dressing pavilion, only a few operations being done here. Next by train to the distributing centers, about 40 kilometers back of the line and every 50 or so kilometers along the line. At the distributing centers are the first permanent hospitals.

The permanent hospitals take all the men that can go back to the front in less than seven days, also all cases unable to travel further due to shock, hemorrhage, etc. Here necessary operations are performed.

At the distributing center the injured gets his third and last tag, with a history, treatment given, destination, dressing to be done en route and food to be given en route. Each distributing center in the Army Zone has a classified list of all hospitals in that zone. All of these base hospitals daily telegraph the number of their vacant beds to the distributing center.

During quiet times every two or three days a train load of 300 wounded leave the distributing center for base hospitals. These cases are selected and sent where they can get the best care according to their condition. The trains are composed of twelve to sixteen coaches. Permanent stretchers are swung in the coaches, and each train has its regular corps of two doctors and orderlies. They take care of the patients en route to the base hospitals, do dressings, administer medication and regulate their food.

Base hospitals have 200 to 7,000 beds. Total capacity of Rouen hospitals under Col. Russel. R.A.M.S. is 7,000 beds.

The base hospitals in the army zone take immediate care of the more serious wounds. They have orders to discharge all patients as soon as they are fit for army service.

A patient may be discharged to one of three places. Discharged as cured on seven days' permission at home, then returning to the front;

discharged to Havre where he can obtain more than seven days' permission at home before returning to the front; or, discharged to other hospitals in the interior.

Patients must be sent back to the front as soon as possible. Cases, except of special interest, are evacuated at the end of four weeks to the interior.

A patient injured in such a manner as to render him unfit for further military service is reformed and the French government does nothing more for him. Private charity cares for the reformed. Schools are established for teaching the blind and deaf; maimed men are taught occupations within their power, artificial arms or legs are furnished, and gymnasiums give massage and graduated exercises for paralysis, contractures, old fractures, etc. These private charities are mostly financed in United States, are well managed and are the most deserving charity existing here at present.

Patients enter base hospitals two to five days following their injury. Their wounds are all slightly septic, with moderate inflammatory reaction. As a rule they are well dressed, except that the dressing is dry, matted to the wound and probably forty-eight hours old. Many have casts or aluminum splints. Physically the men are well nourished, all are very tired, dirty and constipated.

The French military service requests that diligent search be made for *all* foreign material, whether giving symptoms or not. The reason is this:

If a soldier knows he has a piece of shrapnel in him, he is liable to worry, or manufacture symptoms and impair his efficiency as a fighting man. France is not looking to the future, but is bending all her efforts to win the war, and she needs every man. Consequently French surgeons go for all missiles with a resultant mortality of 15 per cent. for projectile wounds of the lungs, abdomen, thighs and other deep parts.

The American surgeons have refused to operate for missiles that do not produce symptoms; they have a very low death rate, and consequently have a very high reputation for efficiency. It is exceedingly difficult to find these missiles after locating with anterior-posterior and lateral radiographs.

The French sacrifice 15 per cent. of these special cases in order to supposedly increase the military value of the remainder.

American surgeons as a rule remain three months. They learn how to handle large numbers of cases. They have observed much, but their knowledge as to the results of their methods employed for the treatment of these injuries are necessarily in a major part deductive, as the majority of cases are slow and last many months.

The only men who have positive knowledge of the actual results obtained are those who have been able to follow their cases through. These men remain for long periods ofttime, generally for the duration of the war.

Dr. Hutchinson of the American Ambulance, Dr. R. R. Fitch of St. Valery en Caux and Dr. John Blake of Ris Orangis have had exceptional opportunities for observing their cases.

The Pharmacopoeia Revision.—As usual the pharmacopoeia about to be issued will be antiquated when it comes out. Some of the drugs in it will have become more or less obsolete, while many new ones which have proven of value will not be there. Since all the publications of the A.M.A. are issued promptly and in excellent style, and are complete, correct and up to date, it is suggested that the U.S.P. should be taken over by the A.M.A., and be henceforth published by it. It may be extreme to say that the world would be almost as happy without a Phamacopoeia, but at least we could get along very nicely with a Pharmacopoeia about one-half the size of the present one. A good deal of the matter it contains is quite superfluous and its deletion would prove distictly advantageous to (1) the book, (2) to the medical profession, (3) to the pharmaceutical profession and (4) last but not least, to the students of medicine and pharmacy (*Critic and Guide,* July, 1916, p. 239).

Aspirin.—The patent on aspirin will expire next year. The Bayer Company, the American agents, view with disfavor the prospect of losing the right to the sole manufacture of acetyl-salicylic acid. This may explain the campaign of publicity which the Bayer Company has inaugurated in the lay press in which the public is urged to buy the Bayer brand of acetylsalicylic acid (aspirin) only. There can be no better time than the present for the medical profession to substitute for the non-descriptive name "aspirin" the descriptive and correct name acetylsalicylic acid. (*Jour. A.M.A.,* Aug. 12, 1916, p. 515).

Olio-Phlogosis.—The Council of Pharmacy and Chemistry reports that Olio-Phlogosis (The Mystic Chemical Co., Kansas City, Mo.) is not eligible for admission to New and Nonofficial Remedies. Olio-Phlogosis is to be applied externally by means of a cotton pad for pneumonia, bronchitis, pleurisy, etc. According to information sent to the Council it consists of glycerine to which has been added small amounts of essential oils, iodine, resorcinol, boric acid, quinine bisulphate and sodium thiosulphate. The Council concluded that the claims for Olio-Phlogosis are unwarranted, that its composition is complex and irrational and that the nondescriptive and therapeutically suggestive name is likely to lead to uncritical use. (*Jour. A.M.A.,* Aug. 19, 1916, p. 631).

TRANSACTIONS

OF THE

Clinical Society of the University of Michigan

Stated Meeting, June 7, 1916

The President, UDO J. WILE, M.D., in the Chair
Reported by REUBEN PETERSON, M D., Secretary

REPORT OF A CASE OF HYDROCEPHALUS WITH SPINABIFIDA AND COMPLETE SITUS INVERSUS.

L. L. BOTTSFORD, M.D.
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The case I wish to report tonight, is of interest from several viewpoints. Its principal obstetric importance comes from the relative rarity of forehead presentations, but the associated malformations which the fetus exhibited are also well worth consideration.

Primary forehead presentations, or those due to factors operative during pregnancy are very rare, because, if deflexion of the head has proceeded thus far, labor usually produces full deflexion and we have either a brow or face presentation to deal with. The case which is to follow is one of secondary forehead presentation occurring after the onset of labor and for which the etiologic factor was first definitely determined upon vaginal examination. This type of presentation, when persistent, becomes as formidable as persistent brow cases, spontaneous delivery being practically impossible if the fetus is of normal size and development.

A. S., primipa, age 22 years, single, entered the Obstetric Clinic January 12, 1916. Her family history was entirely negative for any chronic or hereditary disease. Her personal history was also unimportant, as she had always been well aside from the usual children's diseases. No history of lues or Neisser infection could be obtained. She menstruated first at the age of twelve years and her periods had always been regular and normal. No constitutional symptoms were present. Her last period began May 24, 1915, and was of the usual duration. She had had no show since. A definite history of coitus occurring June 1, was, however, obtained and accordingly her expected labor was set for March 8, 1916. The pregnancy thus far had been uneventful. Examination showed the patient of moderate frame and of good general nutrition. The heart and lungs were negative. Abdominal examination showed her pregnancy advanced about seven and a half months; the fetus was apparently of normal size, presenting in occiput right transverse position and was active. Pelvic measurements were large, interspinous diameter measuring 27 cm.; intercristal 29.25 cm.; external conjugate 20 cm.; tubers 9.5 cm.; diagonal conjugate not reached. Vaginal examination was entirely negative and ballottement of the fetus was obtained. No physical findings at all suggestive of lues were noted.

Labor.—The patient first began to have definite contractions about 10 p. m. March 7, and was accordingly prepared for labor. When examined at 3 a. m. the findings were as follows: Breech in the fundus; back on the right, poorly felt below the umbilicus, and on deep palpation felt near the midline extending partly on the right and partly on the left. The small parts were in the left upper abdomen; head in the pelvis, well fixed, with the cephalic prominence on the right side and definite. The fetal heart sounds were best heard on the right side, below the umbilicus, near the midline and were normal. Rectal examination showed the cervix dilated to about 3 cm. with the membranes intact. Directly over and within the cervical rim could be very distinctly palpated the large anterior fontanelle. Uterine contractions were occurring every three or four minutes, each lasting forty-five to sixty seconds. Examination at 8 a. m. gave practically the same abdominal findings, except that the back was more easily

felt in the lower right midline. The fundus was high with the breech reaching almost to the ensiform. The fetal heart tones were now heard best in the middle and to the left. The cephalic prominence was also more marked on the right than at the previous examination. Rectal examination showed that no descent had occurred, and the anterior fontanelle was still distinctly palpable. This seemed larger and more definite than normal. With these findings, a diagnosis of partial extension of the head, that is, forehead presentation was made. The cervix was dilated about 4 to 5 cm. with the membranes still unruptured. Contractions were occurring regularly, every three minutes, of good quality, and with increasing severity. Examination at 11:30 a. m. showed the same findings. On rectal examination the head was still felt well above the spine and the cervix half dilated. During each contraction the large fontanelle seemed to recede towards the right and posterior, as though the head was attempting further extension.

Upon consideration of the fact that the patient had been in active labor for approximately fifteen hours with strong uterine contractions throughout, that the head had not descended and was tending towards further extension, it was decided to interfere. She was put upon the table at 12:45 p. m. and prepared for delivery. Vaginal examination confirmed the previous findings, except that the cervix was found nearly fully dilated and very soft. The bones of the fetal head were felt to be very loose and movable and the anterior fontanelle very large. No distinct crepitation was observed, but the feel was more like that of a macerated skull. The fetal heart rate was ascertained to be 124. A probable diagnosis of moderate hydrocephalus was now made. The membranes were ruptured artificially and a moderate amount of greenish amniotic fluid drained away, no hydramnios being present. The fetal head was found to be lying in occiput right transverse position, partly extended with the large fontanelle the most dependent portion. The sutures were observed to be easily palpable and somewhat widely separated. With the hand inside the cervix the head was flexed and the occiput rotated manually anteriorly to the symphysis, and held in that position by abdominal pressure, while forceps were applied. The fetal heart at this time became somewhat rapid, about 160 per minute. Moderate traction was carefully made by forceps following which the fetal heart gradually slowed. Examination after the forceps were loosened showed a prolapsed cord. This was replaced manually and traction again carefully attempted. No advance of the head was obtained and it was not deemed advisable to use forceful traction. The fetal heart tones could no longer be obtained. Craniotomy was, therefore, decided upon. The forceps blades were left on, the scissors introduced through the sagittal suture, posterior to the anterior fontanelle and the meninges perforated. Immediately there was a gush of clear fluid, as though a second amniotic sac had been ruptured. Considerable brain substance also drained away. Careful traction with the forceps now produced steady advance of the head and the latter was delivered easily at 1:40 p. m. The third stage of labor was practically normal, except that the uterus remained rather atonic and it was found necessary to remove the placenta manually from the lower segment. The membranes were practically intact and showed no evidence of an interrupted twin pregnancy. There was a slight second degree laceration, which was immediately repaired. The patient then received a hot intrauterine douche before being carried to the ward.

Examination of the fetus showed it to be a female, 53 cm. in length, fully developed and weighing about seven and one-half pounds. The head was distinctly globular in shape and large, even after the evacuation of fluid measuring as follows: occipitofrontal circumference 35 cm.; bitemporal diameter 9 cm.; biparietal diameter 10.5 cm.; suboccipitobregmatic circumference 34 cm. The temporal fossae were obliterated. These facts bore out our previous diagnosis of moderate hydrocephalus, even though the features of the fetus were not distinctly hydrocephalic. The skull bones were rather thick accounting for the fact that no definite crepitation was obtained.

There was also present in the lumbosacral region a spinabifia with the skin and membranes of the cord intact, but reddened and thinner than normal. On autopsy another very interesting condition was discovered, namely, a complete situs inversus, characterized by dextrocardia, large lobe of liver, gallbladder and appendix on the left side of abdomen, spleen and stomach on the right, and the sigmoid dipping down into the pelvis along the right sacroiliac synchondrosis. The pelvic organs and external genitalia were normal.

On looking over the literature I find that in a curiously large number of cases the sex of malformations is female. This is particularly true of double monsters. Very frequently malformations are combined in the most curious

ways. Whether this is a purely accidental occurrence or a definite relationship cannot be said, although Schwalbe states that some French writers have discovered definite laws with regard to such occurrences.

Hydrocephalus is usually explained by an excessive secretion from the ependymal cells of the choroid plexus. The amount of fluid varies from moderate amounts up to five liters or more. As to the etiology, Ballantyne believes that antenatal hydrocephalus is due to an embryologic arrest of development to which may be superadded in the fetal period a disease affecting the malformed parts. It may also arise in postnatal life without a preexisting malformation in the fetal epoch, as a consequence of birth injury, tumors, meningitis, etc. Causes of the antenatal type are thought to be chronic alcoholism, syphilis, trauma or any fetal meningitis. Of 362 cases of hereditary lues studied by Hochsinger, thirty-four were hydrocephalic. Maternal infections, as smallpox, influenza, syphilis or tuberculosis may also play a part in the etiology. Hydrocephalus often recurs in the successive children born to one mother, and is often associated with other malformations, as micrencephalus, encephalocele, spinabifida, clubfoot, ascites and hydramnios. Of sixty cases reported by Von Winkel, eighteen showed spinabifida. Among the sixty there were also five cases of double clubfoot, two of ascites, and three of hydramnios. Of 330 cases of spinabifida reported by Schwalbe, forty-one were accompanied by hydrocephalus.

The characteristics of a hydrocephalic head are its globular shape, thin skull bones, translucent and displaced outward, small face and eyes displaced downward and forward. The body is smaller, as a rule, although in some cases, as the one reported tonight the fetus may be otherwise well developed and of good size.

The occurrence of this condition varies a great deal according to the literature. In the Göttingen Clinic, there were eight cases in 4,200 deliveries, or a ratio of one to 525 births. Schuchard reports sixteen cases in 12,055 deliveries, or a ratio of one to 753. Kleinhans reports seven cases occurring in 11,254 deliveries, or a ratio of one to 1,600. Von Winkel reports eight cases in 15,000 deliveries, or a ratio of one to 1,875 deliveries.

The course of labor is premature in a large percentage of cases. If at term, the course depends upon the size of the fetal head. Spontaneous birth of a hydrocephalic child is only possible when it is of a slight, or at the best, of a medium degree of severity. In the higher grades this can only occur if the fetus is already dead or macerated, or if the hydrocephalus burst spontaneously. Such a rupture has been observed most frequently in breech presentations. The presentation is cephalic in a majority of cases of hydrocephalus, although pelvic presentations are frequently observed, occurring in about 29 per cent. of cases. Cephalic presentation occurred sixteen times out of twenty-two cases reported from the Königsberg Clinic by Hammerschlag. Of twenty-two cases reported by Hohl, sixty-two were cephalic and fifteen pelvic presentations. Almost all the cases running an unfavorable course for the mother are those in which the hydrocephalus presents by the head, due to the fact that the lower uterine segment is more easily thinned out in this type of presentation, and progress is much slower, if it occurs at all. Spontaneous birth of the hydrocephalic head occurs more easily in breech cases. The variety of presentation of the head is also of importance in regard to the progress of labor. If the head engages in the pelvis with its greatest occipitofrontal diameter, that is, brow presentation, it is much more unfavorable than when it is markedly flexed and occupying an oblique diameter, when molding can occur. Clinically, the fact has been well established that it is not the most marked forms of hydrocephalus which give rise to the greatest difficulties during delivery, for these may mold sufficiently or burst spontaneously but the moderate degrees cause marked dystocia.

How often interference during labor is necessary in cases of hydrocephalus, the statistics of Hohl and Schuchard demonstrate. Of seventy-seven cases collected by Hohl, artificial aid was necessary for the termination of labor in sixty-three. Of seventy-three cases reported by Schuchard, there was interference in sixty-two. Of seven cases in the Prague Clinic, and nine cases reported by Veit, artificial delivery had to be used on each occasion.

Prognosis.—The importance of this complication is very evident from the following statistics. Of Hohl's seventy-seven mothers, twenty-one died. Of Schuchard's seventy-three, thirteen died. Of Veit's nine, four died. The primary cause of death was in most cases rupture of the uterus, accompanied also frequently by severe lacerations, urinary fistulae and sepsis, all of which result from the long, difficult labors, repeated examinations and the necessary operative interference. Of late, due to better asepsis, the prognosis has improved. In thirty cases

reported by Hoffman and Bertino, only two mothers died. Of eight cases in the Breslau Clinic, and eight in the Göttingen Clinic, there were no maternal deaths.

The fetal prognosis, however, is much worse. Intrauterine death occurs frequently. A large number die at or shortly after birth from the interference which the condition necessitates. Following tapping or perforation in some cases the disease is arrested and development proceeds. This outcome is rare and most children succumb in the first year to intercurrent disease or the primary trouble. Treatment of such cases as have survived in a thankless task, although temporary results do at times follow repeated lumbar puncture and antiluetic treatment. Of Schuchard's seventy-three cases where six children were born alive, one who was tapped lived six weeks. Hoffman in 1902 reported eleven cases with three children born alive. Of these two were tapped; one died immediately after birth, and the other after seven hours. In the seven cases of the Prague Clinic, the children were all stillborn.

The diagnosis of hydrocephalus during labor is not often made. In some the diagnosis is very difficult, especially in the moderate cases and where there is but little amniotic fluid. An excessively large abdomen with the head remaining unengaged above the bony inlet after good pains are present is very suggestive of hydrocephalus, provided the pelvis is normal. The parchment like crepitation of the bones of the skull said to be pathognomonic of hydrocephalus can rarely be obtained by abdominal palpation. It is more easily obtained by vaginal examination, at which time one may also note that the sutures are wide and gaping and the fontanelles large and bulging. On the other hand, cases of hydrocephalus also occur, where the skull bones are not thinned but thickened, and where no crepitation is obtained. Absence of ballottement of the fetal head and rapid fetal heart rate are at times suggestive of the diagnosis. Mistakes in diagnosis are frequent, as when hydrocephalus is falsely diagnosed as exencephalus, hernia cerebri, tumors of the breech, fetal maceration, etc. A correct diagnosis can, however, always be made by bimanual examination under anesthesia.

The treatment of this condition varies. Fritsch advises perforation of the skull with Smellie's scissors when the cervix is sufficiently dilated whether the fetus is alive or dead, followed by manual extraction. Other authors pay more attention to the life of the child in view of the fact that it is quite possible for a hydrocephalic child to remain alive after birth, even becoming cured. The use of forceps in a case of hydrocephalus is entirely rejected by some authors for the reason that the danger of slipping is too great, but conservative application is usually considered good treatment. Ahlfeld, Küstner, Von Winkel, and Olshausen recommend diminution in size of the skull by puncture with a fine trocar about six millimeters in diameter. The further progress of the delivery is then left to nature. Care is taken when the trocar is inserted not to injure the cerebral sinuses. If the child is dead, or dies later, perforation is carried out or the puncture wound enlarged and the cranioclast is employed in case expression or manual extraction is impossible. Puncture is of little value in the treatment of the aftercoming hydrocephalic head in a breech case, the child usually dying in the interim. Here perforation need only be considered, the instrument being inserted through the lateral fontanelle, foramen magnum, hard palate, etc. If the head is high up, the spinal method of Von Huevel may be used. In this method the lower cervical or dorsal portion of the spinal column is divided, the spinal canal opened and a female catheter introduced into the cranial cavity and the fluid evacuated. If spinafida be also present, it may be opened and the catheter pushed into the spinal canal. Version for delivery of a hydrocephalic child is to be regarded as distinctly contraindicated by reason of the great danger of uterine rupture.

The question may be raised as to whether there has not been too much regard paid to the life of the child. A hydrocephalus tapped during delivery and continuing to live is a great rarity. Indeed, Spiegelburg was unable to find a single case in the literature. In most cases, even when tapped, the condition tends to increase after birth with progressive idiocy and ultimate death. With these facts before us, it seems perhaps that the most rational treatment of such cases during labor is perforation with expression, manual extraction, or the use of the cranioclast to complete the delivery. A much better maternal prognosis could then be given.

Spinabifida occurs with about the same frequency as hydrocephalus. According to Chaussier and Denne, the frequency is about one in 500 to 1,000 cases. The fetal prognosis is also very poor, most of the children dying the first year after birth. According to Biedert of thirty-two cases, twenty-five died in the first week after birth. Some cases do recover following surgical treatment, leaving, however, a total

mortality of at least 50 per cent. The course of labor is usually not affected by spinabifida unless it is of the cystic type, and presentation is usually cephalic.

The remaining malformation, complete situs inversus, will not be discussed in this paper. Its rarity is assurred when Kerr in reporting 10,000 autopsies covering a period of ten years states that he saw only two cases of this condition. Bland Sutton reports one case in 3,000 abdominal sections.

The etiology of the condition is not understood. It is probably due to an inherent condition in the fertilized ovum, although Schwalbe mentions a theory that it may perhaps be explained by uniovluar twin pregnancy with the early death of one fetus, the fetus which goes on to development being the mirror image of the other. Should this be the explanation we would expect to find evidences of the early multiple pregnancy in the fetal and maternal membranes.

In conclusion I wish to state that no etiologic factor has as yet been discovered for any of the malformations present in this case. History, physical examination, and Wassermann of the mother were negative. The Wassermann taken on blood, obtained from the cord at the time of delivery, and microscopic examination of the placenta were negative. There was, however, a small tumor formation removed from the under surface of the liver of the fetus, which suggested a gummatous formation. The complete pathologic report has not yet been made. We, therefore, cannot definitely rule out lues or some other fetal meningitis, or disease. The further report of this case from the standpoint of situs inversus, will probably be made later by the Pathological Department. The mother made an entirely uneventful convalescence and was discharged from the Hospital in good condition.

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DISCUSSION.

DR. REUBEN PETERSON: The diagnosis of hydrocephalus is difficult in most cases, except where the accumulation of fluid within the fetal skull is considerable. Even here the condition may be mistaken for some other condition, since the large size of the head makes palpation from below difficult, as the head is apt to remain high up in the pelvis. The diagnosis is less difficult in moderate degrees of hydrocephalus such as in this case where the bones of the fetal skull were distinctly separated and quite movable.

We were very careful in the application of the forceps, bearing in mind the danger of slipping in such a condition. Excessive traction was also avoided since hydrocephalus is notable for its tendency towards a thinning of the lower uterine segment after some hours of labor. Many cases of uterine rupture have followed the injudicious use of forceps in these cases.

After the prolapse and replacement of the cord and the death of the fetus I did not hesitate to perform craniotomy since it was clearly indicated and easily performed. It is a most unsurgical procedure and poor obstetrics to attempt to pull the large head of a dead child through the pelvis and soft parts of the mother without first diminishing the size of the head. Failure to realize this has resulted in great and unnecessary mutilation of the mother. The sooner we realize this and increase the indications of craniotomy especially on the dead fetus, the better will be the obstetrics of the country.

The results so far as the hydrocephalic child is concerned are extremely unfavorable. My position is something like this: if the mother's life or health be not endangered, I would not in any way injure the living hydrocephalic fetus. However, the chances of doing anything for hydrocephalic children are so poor that I do not think it justifiable to add to the obstetric septic dangers of the mother in any way in order to attempt to save children where the primary and ultimate prognosis is so poor.

As regards situs inversus I have had a number of cases in laparotomies performed during the past twenty years. None of these was diagnosed prior to operation, although it is only fair to state that they occurred before the present careful physical examinations were made prior to the operations. This would lead one to suspect that the condition is far more common than is generally supposed.

DR. RUDOLPH A. BARTHOLOMEW: I think this case illustrates the fact that where we have failure of labor to progress we do not have to depend absolutely upon a vaginal examination to determine the cause. In such a case we have to consider whether it is due to inefficiency of the pains or to some abnormality of the birth canal, either in the bony or soft parts or whether it is due to some abnormality of size or position of the fetus. In this case we could rule out pretty well the fact that the failure to progress was due to inefficiency of the

pains. We could also rule out the fact that the failure to progress was due to abnormality of the birth canal for the bony and soft parts apparently were normal. We had then to consider whether there was something responsible on the part of the child. A careful abdominal examination in this case or in any case is important to make out whether the child is in the proper state of flexion. In this case we determined very definitely that the cephalic prominence was on the side on which the back was and not on the opposite side as it should be. That was the first thing which indicated some abnormality.

Another point of interest is that on rectal examination the large fontanelle could be detected lying directly over the cervical opening. As soon as the head gets out of flexion to some degree the large fontanelle tends to be applied more and more over the cervical opening. The character of the fontanelle in this case was also significant, although we did not appreciate that at the time as much as we should have. The large size of it and the very great movability of the bones in a case where we could not hear the fetal heart would have suggested at once a macerated fetus. Here it was distinctly a surprise to hear good fetal heart tones with such a fontanelle.

It is also of interest to note how easy it was to perform the craniotomy without the use of any special instruments. Where the head is lying very low in the canal it can be done very easily with the scissors alone.

COLEY'S MIXED TOXINS IN THE TREATMENT OF SARCOMATA WITH A REPORT OF FOUR CASES OF OSTEOSARCOMA TREATED BY THIS METHOD.

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The purpose of this paper is to give in brief the circumstances which led to the adoption of "Coley's Serum" as one of the agents for treating sarcomata; together with a report of four cases of sarcoma of bone which have been treated by this method in the Surgical Clinic of this Hospital in the last eighteen months.

In 1884 Dr. Bull at a New York hospital operated four times on a patient for recurrent round celled sarcoma of the neck. Shortly after the last operation, erysipelas developed, the tumor disappeared, the patient left the hospital well and was in perfect health seven years later when last seen. Previous to this incident, Bush in 1866 had noted that occasionally an attack of erysipelas benefited a sarcoma. This fact had been observed in the seventeenth century but no practical application had been made of it. Later Billroth reported a case of sarcoma of the pharynx which was cured by an attack of facial erysipelas. It was then suggested that in inoperable cases of sarcoma, erysipelas might be established artificially. Soon Fehleisen began inoculating malignant tumors with the streptococcus of erysipelas. Dr. W. B. Coley, ignorant of these experiments of Fehleisen, was so impressed with Dr. Bull's case that he undertook a series of investigations. In 1891 he attempted to produce erysipelas in inoperable cases of sarcoma by inoculation. After numerous failures he did succeed in successfully inoculating seven minims of a bouillon culture in the skin over a tumor in the neck. In twelve hours a typical erysipelas developed. In two weeks the patient was well and remained so for eight years.

Dr. Coley collected thirty-eight cases of malignant disease in which erysipelas had occurred. Of these, eleven became well and thirteen showed marked improvement. This information led Dr. Coley to continue his experiments. He soon determined, (1) that it was hard to produce erysipelas at will: (2) the curative properties were derived from the toxic prineiple of the streptococcus and hence this might be utilized without an actual attack of the disease: (3) there was real danger of death from this artificially produced erysipelas. He had two deaths that year. In his defense it might be said that he was using as subjects for his investigations only those with hopelessly inoperable sarcomata.

In 1892, Coley began experimenting with the toxins and not the living germs. He soon found that injected filtered toxins produced local and constitutional reactions identical with those of an erysipelas of mild degree. Utilizing an idea obtained from some experiments by Rogers, Coley used cultures of the Baeillus Prodigiosus to intensify the aetion of the streptoeoccus.

The fluid is prepared by making a bouillon culture of the streptococcus of erysipelas, which culture is sterilized by heat. The Bacillus Prodigiosus is grown separately; it is sterilized, reduced to a dry powder and a certain amount by weight of this powder is added to each ounce of the streptococcus broth. A little glycerine and thymol are added as preservatives.

Briefly, the method of administration is as follows:

I. Begin with a hypodermatie injection of a minimum dose, usually one-fourth minim. Note this as a corollary. The more vascular the tumor the more severe the reaction. Local injection into the site of the tumor to be smaller than injeetion at a distance.

II. The dose is gradually increased till a chill oeeurs (generally one-half to two hours

PLATE I



Fig. 1. Showing condition of Tibia at time of entrance to Hospital.

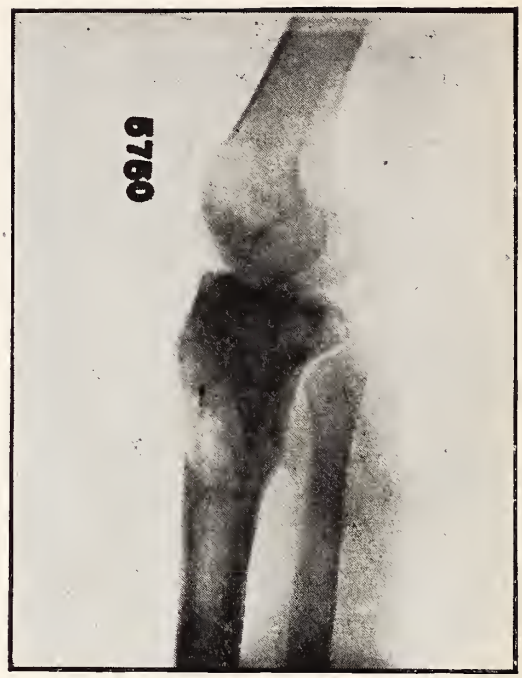


Fig. 2. Showing improvement following operation.



Fig. 3. Showing Maximum Repair.



Fig. 4. Showing evidence of recurrence of the sarcoma.

CASE 1. Sarcoma of Tibia before and after use of Coley's Toxins.

after injection) followed by a temperature of 101° to 104° F.

III. If there is much depression following the reaction give the injection every other day; but if the patient can bear it, daily injections are better. The object is to get a reaction after each injection.

IV. Give tonics and keep the bowels regular.

V. If there is no improvement after four weeks, the chances are that none will occur and it may be wise to abandon the treatment.

Since 1892 Dr. Coley has treated sarcomata with these toxins alone in inoperable cases, or in connection with surgical procedures (both conservative and radical) in a very large number of cases. From time to time he has reported unreservedly the results of this treatment for malignant growths of various types. Since his investigations were reported, many other men have tried them and their experience as published agree, in the main, with those of Dr. Coley.

These results for sarcomata (to which type of neoplasm this paper is limited) may be tabulated somewhat as follows:

10 to 15 per cent. show apparently a permanent cure.

15 per cent. (circ.) show temporary local improvement.

15 per cent. (circ.) the local tumor disappears but later returns.

15 per cent. (circ.) the local tumor disappears but metastases appear.

35 to 40 per cent. show no improvement whatever.

A study of these reported results seems to justify the following conclusions:

The use of Coley's toxins does occasionally produce an alteration of the usual clinical course of sarcomata and brings about improvement and even cure.

It should be recommended in hopelessly inoperable cases. No case of sarcoma is too desperate to warrant a trial. Of such cases, 10 to 12 per cent., hopeless from any other standpoint have been successful.

In the case of sarcomata of the extremities, it should be tried for a short time (two or three weeks) before amputation. If there is prompt and marked improvement, then conservative treatment may be conducted and the limb saved. If there is no improvement, operation can be performed with even greater chances of ultimate success than if the toxins had not been first used.

The greatest value of the toxins lies in the judicious combination with conservative operative treatment. The toxins should then be administered for a considerable period of time with the hope of destroying the cells which have been left behind and so lessen the chance of local and metastatic recurrence.

Our experience in treating the four cases to be reported coincides largely with that of those who have published their results, apparent cures in seemingly hopeless cases and temporary improvement in others.

Harmer of Harvard in his report of thirty-two cases shows that five of his six cures were for sarcomata of the nose and accessory sinuses. Case four, an apparent cure, is that of an inoperable osteosarcoma of the antrum. There are practically no cases on record of sarcomata of the humerus cured by operation, even after as extreme a procedure as interscapulothoracic amputation. Yet Coley in the *Annals of Surgery* for November, 1914 reports two such cases in which curetting merely was done, the patients treated as inoperable and put on the mixed toxin treatment. One was well four years and the other fourteen years later. Our case (2) is that of sarcoma of the head of the humerus apparently cured.

The other two cases, one of sarcoma of the tibia and the other of the femur showed marked temporary improvement.

CASE REPORTS.

Case 1. Miss T. F., a school girl, aged 17, entered the Surgical Clinic March 1, 1915, because of pain and swelling in the right knee with inability to use the limb.

Family history and past personal history are negative.

Trouble in the right knee was first noticed early in October, 1914. There is no history of trauma save for the fact that a year previously the patient had been thrown in a runaway accident and the right ankle bruised at that time. The injury healed rapidly, was never sore, and never disturbed her.

In October, 1914, the patient first noticed a pain in the right knee and tibia. This was sharp, came in paroxysms, and increased in frequency. At the time of her entrance to the Hospital the pain was practically continuous, though it was aggravated by motion. Soon after the pain started, there was noticed a swelling just below the knee on the outer side of the leg. It was tender and gradually increased in size. A radiograph was taken with the following report: "The head of the tibia is the seat of a rather absorbing process which has resulted in the loss of all details of the external

portion. The joint surface is spared. There is some swelling. No periosteal reaction, no abnormal calcification. The cortex has entirely disappeared both front and back. Evidently an infiltrative growth within the bone. Diagnosis, sarcoma." (Plate 1, Fig. 1.)

On the strength of the history, the examination and the radiograph, a diagnosis of osteosarcoma was made and an operation advised. The laboratory findings were negative. The patient was operated upon March 4, 1915. A linear incision was made over the tumor and the periosteum exposed. This was everywhere intact and the neoplasm was found to be wholly within the bone. The periosteum was incised and the tumor material removed. This was soft, vascular and cellular. The whole cortex of the bone was eroded, save for some particles still adherent to the periosteum. The cavity was packed with gauze impregnated with 1-10,000 adrenalin solution to control the hemorrhage.

The pathologic report on the specimen removed at the operation was, "Giant celled myelogenous sarcoma."

The patient reacted promptly from the operation and the next day Coley's toxins were started. The initial dose was one-fourth minim. This injection was followed in four hours by a chill and a temperature of 101.5°. The injections and the dosage were increased as rapidly as was safe according to the reaction obtained. The maximum dose of nineteen minims was given April 10, 1915, about five weeks after the operation. The patient improved rapidly, gained weight and suffered no pain.

On April 28, 1915, a second course was started. The maximum dose of twenty minims was reached in less than a month and the patient was discharged May 22, 1915. At that time the bone cavity had markedly diminished in extent and was filling in with healthy granulation tissue. There was no evidence of a recurrence and the patient was able to walk with crutches.

On June 29, 1915, the patient returned for examination. This showed the bone defect filling in nicely: there was no tenderness over the bone on pressure and no evidence of a recurrence. The X-ray showed a progressive obliteration of the bone defect with new formed osseous tissue. (Plate 1. Fig. 2.)

In August we wrote the home physician advising a third course of the Coley's toxins. This was started August 18, 1915, and was continued to a maximum dose of fifteen minims.

We saw the patient next on November 5, 1915. The general health of the girl was excellent. The wound was practically healed, and

PLATE II



Figure 1. January 22, 1915. Before operation. Showing condition of head of humerus at time of entrance into Hospital.

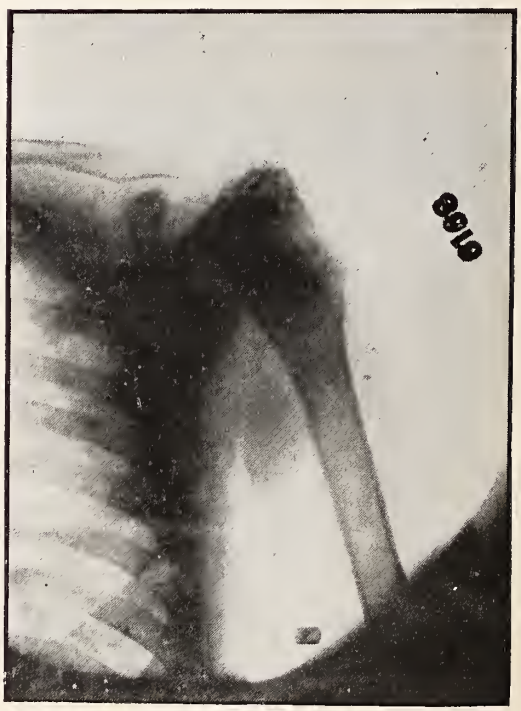


Fig. 2. Oct. 4, 1915. After operation. Showing surgical defect and complete absence of the tumor.

CASE 2. Sarcoma of the Head of the Humerus before and after treatment with Coley's Toxins.

PLATE III



Fig. 1. August 31, 1915.. Before operation. Showing condition of Femur at time of entrance to Hospital.



Fig. 2. January 10, 1916. Showing recurrence of the tumor at site of operation.

CASE 3. Sarcoma of the Femur before and after the use of Coley's Toxins.

the function of the limb was perfect. An X-ray picture at that time showed considerable improvement. (Plate 1, Fig. 3.)

Early in February, 1916, the patient returned for further advice. As before, an X-ray picture was taken which showed about the same condition as previously, but examination locally showed a small soft area on the anterior surface of the tibia near the level of the center of the former incision. Another course of the toxins was advised and was carried out by the home physician.

March, 1916, the patient showed much improvement. Wound practically healed and it was almost impossible to find the spot which had come under suspicion at the last examination.

I had hoped, then, that I could place this case among those which were cured by the toxin treatment, and had I given this report earlier, I might have placed it there. But a month has made a difference. April 26, 1916, Miss F. again presented herself at our request. Examination showed the wound entirely healed but examination of the suspected area showed that it had increased somewhat in extent. There was some swelling, redness of the skin and pulsation. A radiographic picture was taken and confirmed our fears. The thick sclerosing margin of the surgical defect has almost entirely disappeared; the cortex on the internal surface is much reduced in thickness. Diagnosis, "recurrent sarcoma of the head of the tibia." (Plate 1. Fig. 4.)

The patient was advised to return home for two weeks and continue the course of toxin treatment which she had interrupted to come to the Hospital. If there be no improvement at the end of this period, we will undoubtedly advise another local removal of the tumor with intensive toxin treatment here at the Hospital.

Case 2. A. W., schoolboy, age 15, entered the University Hospital January 22, 1915, because of a swelling in the right shoulder and an inability to raise the right arm.

Family history and past personal history are wholly negative.

Present Trouble.—In April, 1914, the patient began to have pain in the right shoulder. There was no history of injury that could be recalled by either the patient or by anyone in his family. The affection was diagnosed as rheumatism and so treated. Gradually the pain became more severe and an increasing disability finally brought the patient to the Hospital.

On entrance there was noted a swelling involving the region of the head of the humerus anteriorly; there was some atrophy of the muscles of the right hand and the grasp of that hand was weaker than that of the left. A radiograph was taken and the picture was interpreted by our roentgenologist as follows: "On the external anterior surface of the head of the humerus involving both the epiphysis and the diaphysis, there is an irregular area of absorption with localized areas of calcification on both

in the center and the periphery extending well out toward the integument. The head of the bone is considerably enlarged with practically no wasting of the shaft of the humerus distal to the pathology. Diagnosis: Sarcoma of the head of the humerus." (Plate II. Fig. 1.)

Blood examination showed Hgb. 90. Reds, 4,900,000. Whites, 7,500. Urine negative. A probable diagnosis was made of sarcoma of the head of the humerus and operation advised.

The patient was operated upon January 29, 1915. An incision was made over the deltoid muscle down to the bone and a large cavity covered by a mere shell of bone was discovered. This was opened and a soft medullary, vascular tumor mass was removed. The wound was packed with gauze.

This specimen was examined by the pathologist and the following report returned: "Myelogenous sarcoma. Great numbers of enormous giant cells in a matrix of large round epithelioid cells, probably of endothelioid origin. Prognosis not very good. Should be searched carefully for metastases."

On the third day following this operation Coley's toxin treatment was started. The initial dose was one-fourth minim. Four hours after the injection the temperature rose to 103.6°, pulse 120, respirations 22. The temperature reached normal the next day. The same dose was repeated three times with the same result. A fourth and fifth time the same dose was given with but slight reaction. Then it was deemed safe to increase the dosage. On the fourteenth day after the operation the dose of one minim was reached. Following this the serum was increased one minim at a time and was given every day, or every other day according to the reaction to a maximum dose of nineteen minims.

The wound was dressed daily and improved rapidly. The bone cavity narrowed more and more with seemingly healthy granulations. The patient was discharged March 17, 1915, to be treated by the home physician who co-operated finely. The wound was dressed as we directed and a second course of the serum was given.

June 15, 1915, the doctor wrote as follows: "The wound has healed nicely and the patient is in good health and is getting the use of the arm. There is no pain and the arm is nearly as large as the other."

In September, 1915, we wrote for further information to the physician who sent the patient to us for our examination on October 4, 1915. Examination on that date showed a perfectly healed scar on the right shoulder. "Motion of the shoulder is only slightly limited. There is no pain. The patient has full functional use of the arm. Has gained weight and is doing regular farm work."

A radiograph taken at that time showed excessive calcification in the head of the bone, and the defect obliterated. (Plate II, Fig. 2.) The patient was referred to the Medical Clinic for examination with reference to metastases and the report was returned that no evidence of metastases could be found. Though the condition seemed wholly cured the physician was advised to give another course of the toxins.

On March 20, 1916, fourteen months after the operation, the physician sent this note. "The boy is doing fine. The shoulder is about like the other one. He is working in the mill every day. No pain, and he can use it almost as well as ever."

Case 3. Miss M. G., age 18, came to the Hospital August 31, 1915, because of pain and swelling in the left knee.

Family history and personal history are negative.

In February, 1915, the patient slipped on some ice and turned her left ankle thereby wrenching the knee. This did not trouble her till three weeks later when she began to have sharp pains darting up and down the leg, and had to walk with a limp. The pain became more severe and in May the knee began to swell. She continued in school but when the semester ended she kept quiet and the knee became less painful and the swelling decreased. July first she started work in the dining room of a summer hotel. This work brought on the old trouble. On August first she again turned her left ankle and twisted the knee. This made the pain much more severe and she could not walk on the limb. For four weeks prior to entrance the patient had been using crutches.

Examination at the time of entrance to the Hospital showed a swelling just above and external to the knee joint, rather firm, smooth and tender. The blood count was about normal and urine was negative. The X-ray report was as follows: "There is an almost exactly spherical shadow about the size of an orange on the lateral aspect of the knee, central just over the external condyle. It has produced decalcification and absorption of the shaft for about one-half its diameter. The external condyle is almost completely decalcified. There is almost no tissue reaction, a mere suggestion of calcification along one edge. Diagnosis: Evidently some neoplasm, presumably sarcoma." (Plate III. Fig. 1.)

The patient was operated in the Surgical Clinic, September 4, 1915, under ether. A longitudinal incision was made over the tumor and the mass exposed. The periosteum was incised and the tumor removed. The material was very soft and friable and its removal was accompanied by profuse hemorrhage. The cavity was found to extend nearly through the bone. It was swabbed with a half per cent. formalin solution and packed with gauze. The pathologic report on the specimen removed was, "Giant cell, spindle cell, myelogenous sarcoma. Much necrosis."

The patient rallied promptly from the operation except that she ran a rapid pulse for several days for which condition tincture of digitalis was administered. Coley's toxins were started on the second day after the operation with the usual initial dose of one-fourth minim. The maximum dose of twenty minums was reached on the fortieth day after the operation, the average interval of doses thus being one every other day.

A second radiograph, taken November 9, 1915, showed very little change, and little evidence of a reparative process. Clinically the skin incision healed well but the bone cavity did not granulate in as was hoped.

On November 10, 1915, a month after the completion of the first course, a new course of toxin treatment was begun with an initial dose of one minim. The patient seemed to react more severely to this second course and it could not be given so rapidly as before. The most marked reaction was obtained at the ten minim dose when the temperature reached 105.1°. The temperature promptly fell and reached normal the next day. The last dose was given January 15, 1916.

In the meantime, during the second week in January a change was noted. At the lower angle of the wound there began to protrude what at first seemed like granulation tissue. But it grew rapidly, and on palpation it was soft and pulsating. We became suspicious of it and a small portion was removed on January 11 for pathologic diagnosis. The report came back, "Giant celled sarcoma with pyogenic infection. One part of the sarcoma seems to be rapidly proliferating." A third radiograph on January 10, 1916, showed considerable progress in the erosion with no evidence of a reconstructive process. (Plate III. Fig. 2). Examination a few days later showed a marked increase in the size of the tumor. From this weight of evidence it was decided to perform a radical operation, and a hip joint amputation was done on January 17, 1916.

Macroscopic examination of the limb after operation showed that the tumor had extended to the surface of the cartilage covering the external condyle of the femur. It had infiltrated the soft parts along the external ligament to the head of the fibula. Of the lower end of the femur internal to the tumor there was left but a thin shell of bone which was easily crushed. The tumor extended posteriorly into the soft parts to within one-quarter inch of the popliteal vessels.

The patient's convalescence was uneventful and she was discharged March 13, 1916, with the stump entirely healed, general health excellent and with no sign of recurrence.

Case 4. Mrs. C. S., age 58. Transferred from the Otolaryngologic Clinic, July 24, 1914. The patient came because of swelling of the left side of the face. The family and past personal history are wholly negative.

In March, 1914, after a long drive in the cold, the patient noticed a pain in the left side of the upper lip. This grew worse and became neuralgic in character. A month later a swelling began to appear beneath the left eye. This was poulticed without effect. A doctor was consulted early in May and he gave her two X-ray treatments. The tumor grew larger and the patient was referred to a specialist who curetted the antrum of Highmore and sent a specimen of the curettings to Ann Arbor where a diagnosis of "Osteosarcoma" was made. During July, strong X-ray treatments were given with no improvement.

Examination on her entrance to this Hospital revealed the following condition: "The left cheek is occupied by a firm, dense smooth tumor apparently appearing through the anterior wall of the antrum and infiltrating the cheek tissues to the angle of the jaw. There is some exophthalmos. The skin of the cheek is raised by the tumor to the level of the nose, is edematous, red and congested. The tumor is hard and immovable. The lateral wall of the nose is pushed forward so as to come in contact with the septum." A diagnosis of inoperable osteosarcoma was made and the Coley toxins advised.

The initial dose of one-fourth minim was given July 27, 1914. It was then decided to ligate the carotid artery on that side to lessen the blood supply to the tumor and on July 30, the left common carotid artery was ligated. Two days later the "Serum" treatment was recommenced. The patient showed no particular reaction till a dose of eight minims was

reached. The most marked effect was obtained at the last dose of fifteen minims when the temperature reached 104.6°. The patient was discharged September 13, 1914. The tumor was somewhat lessened in size, the left eye was normal and the patient had gained in weight and strength.

The toxin treatment was continued at home by the patient's physician. The following is his report of the treatment:

"September 24, 1914, the initial dose of one minim was given. Daily injections for two weeks, then every other day or so till November 24. Then courses of a few days' treatments followed by a few days' rest. From September, 1914 to March, 1915 fifty-six injections were given. Then at longer intervals to August, 1915."

A letter from the doctor dated November 9, 1914, says, "Mrs. S. is still progressing finely. Her face is normal except for some redness and hardness due to chronic inflammation."

A communication from this same physician October 8, 1915, almost a year later, states that there is no sign of a recurrence. The doctor further says that the patient has asked him to produce some fresh serum and use it. It is rather unusual, we find, for a patient once all signs of disease are gone to be willing or eager to continue treatment over such an extended period of time.

CONCLUSIONS.

Our experience, as indicated by these four cases, seems to justify us in using Coley's mixed toxins as recommended by the man who has given his name to the fluid.

One patient with sarcoma of the antrum, patently inoperable, who had been given a course of X-ray treatments without improvement by a man who is acknowledged to be an expert in his line, is now well for over twenty months.

Another patient with sarcoma of the head of the humerus, also clinically inoperable, is well a year later, apparently cured and still possessed of his arm.

In the third case, the growth of the tumor was delayed, the health of the patient was greatly improved and the subsequent operation was unusually well borne.

In the fourth case the patient is in good health more than a year later with no evidence of metastases. Unfortunately there is now distinct evidence of a local recurrence. But the general health of the patient is much improved, and if a second operation or if amputation even is indicated later, the chances for a much more favorable and permanent result have been increased.

DISCUSSION.

DR. WALTER A. HOYT: We have tried to be fair in our estimate of the value of these toxins and not to be overenthusiastic. From our experience we think we are justified in continuing their use especially in the inoperable cases or in operable cases where it seems possible to carry out the toxin treatment.

Another very striking point in these cases, is the variability of the results. I was very much interested when the Detroit Surgical Society met in Ann Arbor to hear the different viewpoints. Some men had had several cases of permanent cures, others had never had a case cured. Probably this is due to the use of the toxins, in different varieties of cases. We never consider its use in periosteal sarcoma. This variety, we feel, is purely surgical and an amputation where possible should be carried out immediately. In operable sarcoma of a soft part we have used it in several cases but it has been after operative treatment. Dr. Darling has a case in his private practice of lymphosarcoma. This patient has now been under treatment for two years and a half, has had three different operations, one in which glands were removed from the inguinal region, followed by Coley's toxins. About a year ago this patient came back with a similar mass in the axilla. This was removed with no evidence of metastasis. The patient is well at the present time.

It is important to note that a few years ago it was thought to be criminal to temporize with a sarcoma of this nature. It is interesting to see in the reported cases that metastases from this type of tumor are not very common. There has been considerable argument of late as to the malignancy of giant cell sarcoma and a good many men now claim that giant cell sarcoma is not malignant as compared to the other forms. We have tried other cases besides these four reported, but unfortunately haven't good records. I believe the reason that there are not better results is because they are not followed up by prolonged treatment.

Why Coley's toxins do good is still a mooted question. It is possible that other vaccines would do just as well as Coley's toxins. There has been quite a little work with typhoid where results have been as good after the use of other than the typhoid serum. We had a case of actinomycosis of the abdomen and we gave the man some Coley's toxins intravenously. He had previously been running a temperature of 101 to 102°. The smallest dose of Coley's toxins gave us a typical Coley's toxin reaction. His temperature which was previously high has dropped down and he now has a normal temperature. This is simply working in the dark, but it is interesting. We believe it should be used in all cases of sarcoma, either with or without operation.

DR. WILLIAM LYON: I want to mention a single case of sarcoma treated by Coley's toxins which I had in my practice ten years ago. It was an

interesting case in that it was extremely severe, being a sarcoma apparently involving the ileum and the head of the femur. The patient was in an exceedingly bad condition when I first saw her. She was a woman of forty and had been suffering from so-called rheumatism of the hip for some months. She was quite emaciated and had a marked anemia. Two surgeons decided that it was wholly inoperable and advised Coley's toxins. This patient could not tolerate at any time more than four minims. The first dose of one-quarter minim gave a marked reaction. By the thirtieth dose we had arrived at two minims, still getting reactions so severe that the patient seemed about to die several times. At this time there was a rather rapid enlargement of the mass, the skin over it became reddened and an abscess developed from which we evacuated about thirty ounces of pus. This left a very ragged nasty cavity which was filled with bismuth paste and finally healed. After about five or six weeks of treatment the patient in turning over in bed produced a fracture of the femur. Now after ten years the woman is in perfect health, weight one hundred sixty pounds with decided shortening of the femur but with no sign of a recurrence.

EIGHT YEARS IN THE DEPARTMENT OF INTERNAL MEDICINE.

Albion Walter Hewlett, M.D.
Professor of Internal Medicine, University of Michigan.

On assuming duties at a new university the professor is often expected to review the general problems of his subject and to outline his plans for the future of his new department. His views are of necessity based largely upon his past experiences. While the latter are usually of personal interest only, it has seemed to me that certain developments during the past eight years in the Department of Internal Medicine might also be of general interest. These years have witnessed an extraordinary growth in our University Hospital, a growth which has established the proposition that in this country, as in Germany, a large university hospital can be developed in a small city. The past eight years have also been noteworthy by reason of the wide discussions as to the social aspects of medicine and the duties and obligations of those who teach its clinical branches, particularly with respect to research on the one hand and to private practice on the other. Any actual attempts to solve these problems are worthy of record.

It is not my purpose to discuss the earlier history of the University Hospital. The clinical facilities of the earlier days appear meager enough to one at the present time and the tenacious adherence to these facilities despite the temptation to remove the clinical work to Detroit seems justified now, not alone by the anticipated growth of the Hospital, but also by the fact that in those early days medical education in the country at large was carried on mainly by didactic lectures rather than by personal instruction at the bed side. At the present time the university which contemplates the establishment of clinical work in a small university city may well pause before the early history of Michigan's University Hospital. At the same time, however, it may receive encouragement from the fact that in the western states, at least, the public has been educated to the view that a medical center, whether public or private, can be successfully operated in a small city and that patients are willing to travel considerable distances in order to receive expert medical attention.

In 1908 the University Hospital had already reached dimensions which justified the hopes of those who had looked forward to a clinical center in Ann Arbor. Its growth since that time has shown beyond all doubt that so far as size is concerned the future of the Hospital is secure.

It is apparent from these figures that the growth of the combined departments of internal medicine, pediatrics and infectious diseases has kept pace with that of the Hospital in general and that approximately one-fourth of all patients coming to the Hospital are seen at some time by the staff of these departments.

In 1908 the services in pediatrics and in contagious diseases were numerically deficient when compared with other services in the Hospital. Thanks, however, to the direction of Dr. Cowie, to the enactment of state laws making it possible to send more children to the Hospital at the expense of the county or state, and to the generosity of the city of Ann Arbor in providing a contagious ward for the Hospital, the numerical deficiency in these classes of patients is being remedied and one may safely predict that in the future our students will have little cause to complain of lack of material in either pediatrics or the contagious diseases.

From the social standpoint the chief function of the University Hospital is to provide expert and specialized medical services for those persons who cannot well afford the cost of similar service elsewhere. The legislature of Michigan has enacted laws whereby indigent patients, capable of being helped by expert service, can be sent to the University Hospital for treatment, the cost being charged back to the county or to the state. It is not the indigent alone, however, who stand in need of expert medical

attention. The remark has often been made that the very rich and the very poor receive the best medical attention; the former because they can well afford to employ the most expert specialists, the latter because the modern charitable hospital is usually one where expert service is rendered. The person of moderate means, however, only too frequently gets along without highly specialized services. On the one hand he is too proud to be an object of charity while on the other he is unable or unwilling to pay the fees necessary for specialized service. And yet it is evident from the standpoint of the community that this class of patients should be given the best possible medical service, for under conditions of health they are self supporting and valuable workers, whereas if broken in health their small capital soon makes them a burden either to the family or to the community at large. The clientele of the University Hospital is derived very largely from just this social class; persons who are trying to husband a slender capital in the face of serious or chronic illness. In caring for these patients, it seems to me, the University Hospital has become an important factor in the broad social problems of the state and in the future it will doubtlessly play an even more important role than in the past.

From the standpoint of internal medicine the service which must be rendered is, first of all, based in large part upon the special examinations which are now possible in any good medical center but which can be obtained elsewhere only with considerable difficulty and often at considerable expense. These examinations include microscopic and chemical examinations of the blood, the stomach contents and the excreta, cardiographic records, bacteriologic and serologic examinations, and study by means of the X-ray. With these aids it is frequently possible to arrive at conclusions which would otherwise be impossible. Having made a diagnosis, the question remains whether a patient can be benefited by treatment at the Hospital. If not, he is usually returned to the care of his home physician to whom a letter is written in which the results of the examination are indicated and further treatment suggested.

During the earlier years of my connection with the Hospital the medical wards were rarely crowded and patients presenting special diagnostic difficulties were advised to enter the Hospital for a careful examination. The routine hospital records and the examination by a group of student and graduate assistants furnished data upon which a diagnosis could be based. During the past year, however, the medical wards have frequently been very crowded, partly because larger numbers are coming to the Hospital and partly because the number of seriously ill patients who must be kept in the wards for longer periods of time has also increased. For this reason the plan of admitting patients for diagnostic purposes is gradually becoming more difficult. This fact is evident in the above chart of admissions where it will be noted that while the total numbers coming to the department have steadily increased the number of in-patients has remained practically constant for the past four years. In order to render an efficient diagnostic service in the future it will be necessary either to increase the number of beds at the disposal of the department or to reorganize

GROWTH OF THE UNIVERSITY HOSPITAL AND OF THE DEPARTMENT OF INTERNAL MEDICINE DURING EIGHT YEARS.

Year	Total Patients coming to the Hospital	In-patients Internal Medicine Proper	All patients Internal Medicine Proper‡	All Patients Pediatrics and Infectious Diseases	Sum Total in Department
1907-08	3,727		740	101	841
1908-09	4,259	384	877	123	1000
1909-10	4,856	477	1122	205	1327
1910-11	5,362	531	1249	102	1351
1911-12	5,285	624	1341	218	1559
1912-13	6,803	750	1574	229	1803
1913-14	8,027	847	1653	359	2012
1914-15	9,050	792	1792	545	2337
1915-16†	11,100	740	2000	645	2645

†Figures for June 1916 are estimated.

‡Includes inpatients, outpatients and referred patients.

the out-patient service in such a manner that out-patients can be submitted to a fuller routine examination by a group of assistants.

According to modern standards, the university clinic should devote itself not only to teaching and to the care of patients, but it should also be a center for testing new methods of diagnosis and treatment and for the scientific study of disease. The clinic which is not adding to the sum total of medical knowledge is already falling in the rear. In order to perform this important function two requisites are necessary. In the first place members of the clinical staff must devote a portion of their time to research; in the second place facilities for such research must be furnished by the Hospital or by the University. It is becoming evident that if the members of the clinical staff are to do research in addition to their hospital and teaching duties, there will be relatively little time left for private practice. During the past eight years the members of the staff of internal medicine proper have been restricted in private practice to the extent that no private offices have been opened in the business district of the city. The plan has proved effective in centering the major interest of the staff upon hospital and university duties. Two disadvantages of the plan have become apparent. In the first place it has not been possible to pay the assistants sufficiently large salaries to retain them for an indefinite period with the University. After a few years they must look for some more remunerative positions elsewhere. In the second place, owing to the absence of private wards in the Hospital, the assistants are to a great extent deprived of the experience that comes from contact with private patients. Attention to the relief of minor and seemingly unimportant complaints, personal interest in the patient as an individual and adjustment of ones self to the views of the patient or of his family are too often neglected, even when the staff member is one possessing high ideals and great consideration for others. These objections to the plan followed do not, to my mind, outweigh the advantage of having the staff devote its main energies to university duties. It may be pointed out, however, that where a private ward is attached to the hospital the older assistants are able to increase their incomes and to gain experience in handling private patients without at the same time sacrificing an unnecessary amount of time. This plan has been tried at the Barnes Hospital in St. Louis and at the Peter Bent Brigham Hospital in Boston.

From the standpoint of the students also there is a disadvantage in bringing them in contact solely with men who devote themselves to the scientific side of medicine. Fortunately this difficulty can easily be overcome by having on the staff certain men who are engaged in private practice. Associated with my department for example is an instructor in therapeutics who is thus engaged.

It seems evident that men who are willing to devote their best years to the university side of medicine should be provided with adequate facilities for study and research. The problems confronting internal medicine at the present day involve not alone the usual clinical observation of patients but the study of these patients by the various methods that have been developed in biochemistry, physiology, bacteriology and immunology. These methods are often costly both in time and money and they require laboratory space, special apparatus and the services of technical assistants. Without these facilities such work can be carried on only under considerable difficulties.

Herein it seems to me has been the most serious defect in my department. Our facilities for the study of cardiovascular disease have been excellent but only beginnings have been made along other lines. The growth of the Hospital has been so rapid and the demands for more beds and for a larger staff of physicians and nurses so insistent that requests for larger and more efficient laboratories must often have seemed trivial. But we should remember that size is only one factor in the constitution of a great clinic. In the leading clinics new ideas are being originated or having originated elsewhere are being tested; and at the present day, so far as internal medicine is concerned, this means work in a clinical laboratory equipped for chemical, bacteriologic and physiologic work. The University Hospital has reached a size that is adequate or nearly adequate for its university purposes, and it seems to me that the time is at hand when more effort should be made toward its development as a center of clinical research. In the appointment of my successor a step in this direction has been made. Dr. Foster has made important contributions in applying the methods and data of biochemistry to the solution of clinical problems and he is to have a chemical laboratory connected with his service. It seems to me that further encouragement to this and to similar lines of development must be given, if Michigan is to keep pace with the leaders in clinical medicine.

I cannot close without expressing my appre-

ciation of the work and devotion of those who have been associated with me in the department for the past eight years. One feels a special responsibility for men who spend a number of years in the department and one follows their future careers with peculiar interest. Of those who have been instructors in the department during the past eight years, Dr. Van Zwaluwenburg has become professor of roentgenology at this University, Dr. Warren has become professor of medicine at the Long Island Medical School, Dr. Agnew is professor of Medicine at Alabama, Dr. Schmidt is to enter practice in Detroit, while Dr. Wilson and Dr. Gilbert are to remain under my successor. To develop leaders is surely one function of the University and any reputation which may come to Michigan from such development lies in the hands of these and of similar men in other departments, who have spent a number of years at the Hospital.

DEMONSTRATION OF A CASE OF LUPUS VULGARIS.

UDO J. WILE, M.D.
(From the Clinic of Dermatology and Syphilology, University Hospital, Ann Arbor, Michigan).

The case which I wish to demonstrate is one of rather more than usual interest in view of the fact that the condition it illustrates is rather rare in this country, although common enough in certain parts of Europe. It is a case of extensive lupus vulgaris with extreme destruction of the nose and neighboring parts of the cheek.

Lupus vulgaris was introduced into this country probably from Southern Europe. The cases are sufficiently rare here to excite more than usual interest. Abroad they hardly are worth presenting at a society. The the St. Louis Hospital in Paris which has 1200 beds for the treatment of cutaneous diseases and syphilis, almost every nurse and attendant is an old case of lupus, some of them never leaving the grounds.

There is probably no other granulomatous or malignant disease in which greater destruction is commensurate with general good health. There are cases in which the orbits are invaded, nose entirely eroded, mouth replaced by a small opening surrounded by a very dense scar tissue, the ears gone, yet the general health is conserved.

Association of visceral tuberculosis with lupus is relatively uncommon and one can say conversely that in the various sanatoria for pulmonary tuberculosis, lupus vulgaris is exceedingly rare as a complication or concomitant finding. At the Adirondack Cottage Sanatorium and at Saranec Lake Village where there are some 15,000 people all of whom are tubercular, there was not during the year 1908 a single case of lupus vulgaris. Association with bone tuberculosis occasionally occurs and if one were to examine these patients very carefully it is not unlikely that tuberculosis might be found clinically without subjective findings.

The question arises whether lupus is exogenous or whether it comes from the blood stream. The peculiar predilection of lupus for the face, also for the nose, sides of the cheeks and localization and isolation at that particular place make it seem unlikely that there is a hematogenous source of infection. On the other hand, we not infrequently see lupus vulgaris in places where the process is found incading the entire body. In such cases we must assume a hematogenous infection. Both methods probably occur. Exogenous origin is considered the most common source today for cases of lupus with isolated lesions.

This girl visited this clinic three years ago with an active lupus vulgaris on both sides of the face which had eroded most of the nose. She is Finnish which is a point of interest because lupus vulgaris is found commonly in Finland. The case, of course, could not have been operated upon. The destruction had already occurred, the disease was far advanced and was spreading. We placed the patient on appropriate hygenic measures. She improved rapidly, was given increased doses of tuberculin and the lesion was curetted and cauterized. After four to six months residence in the Hospital the patient was returned with a false nose to her county in a very good condition and with an excellent cosmetic result. She returns now with the disease in exactly the same location and growing more rapidly and more extensive.

The disease is very successfully combatted so far as checking it is concerned in countries where the condition is more commonly seen, by phototherapy, that is, by the Finsen light, the common carbon light cooled by having a constant flow of water passing between the source of the light and a lens which is closely applied to the affected parts. The ideal cosmetic results are obtained with this light. They, however, require a daily exposure to a small area the size of half a dollar for one hour. This requires a special apparatus and a special nurse to give the treatment. In clinics where the condition is common, long tables are arranged with the

lights overhead and a nurse has charge of one of these tables and takes care of the pressure and change of position of the light as the patients lie for treatment.

In examining the profile of this patient one

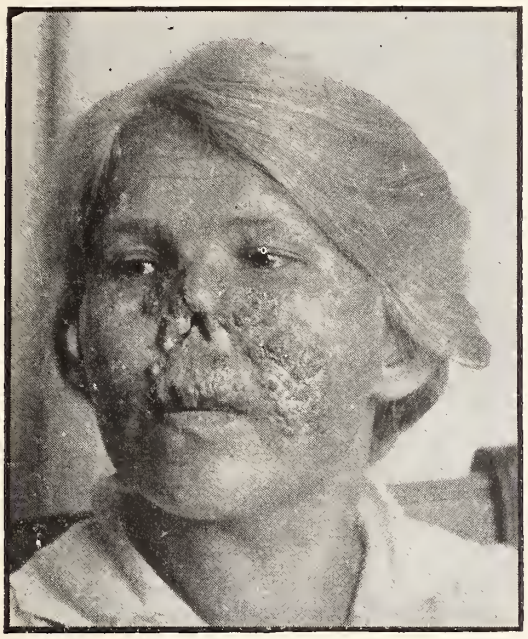


Fig. 1. A Case of Lupus Vulgaris.

sees that the cartilaginous portion of the nose has been eroded. That is characteristic of lupus and not so characteristic of lues. A lues of this extent would most surely have eroded a good deal of bone and sequestrated a large part of the bony septum. Then one can also see the progress of the disease from without inward whereas in lues in such cases it is from within outward. The differential diagnosis is very difficult in those cases in which the disease occurs in hereditary specific individuals, a combination of syphilis and tuberculosis occurring together.

This is not the ulcerative type of lupus but is a dry form. The process is very slow in its progress. The malformation and facies are absolutely typical.

DISCUSSION.

Dr. Reuben Peterson: What will be the outcome?

Dr. Wile: Very slow progression with mucous membranes involvement. The prognosis for life is excellent. Gradually the process will involve the orbit and the ear. When it reaches the ear it spreads very rapidly and invades the middle ear.

RESOLUTIONS ON THE RESIGNATION OF ALBION WALTER HEWLETT, PROFESSOR OF MEDICINE, UNIVERSITY OF MICHIGAN.

This year has seen the last association of this Society with Dr. A. W. Hewlett as an active member. During his eight years of service Dr. Hewlett has built up a splendid clinic in the University Hospital, and by his efforts and the participation of his assistants has contributed to the brilliant success of the Department of Internal Medicine.

Be it resolved, therefore, that the Society express to Dr. Hewlett its great regret at his leaving and at the same time extend to him its best wishes for his continued success at his new post.

Moved and carried that this resolution be preserved on the records of the Society, printed in the *Journal of the Michigan State Medical Society* and a copy hereof sent to Dr. Hewlett.

A Study of "Uterine" Drugs.—Dr. J. D. Pilcher, W. R. Delzell and G. E. Burman, working in the Pharmacologic Laboratory of the University of Nebraska Medical School, have studied the action on the excised guinea pig uterus of a number of drugs which are constituents of proprietary and "patent female" remedies, drugs for the value of which there is little evidence and which would have fallen into disuse but for their exploitation. The following drugs lessened the amplitude of the contractions of the uterine strips, or in stronger solutions caused a complete cessation: Unicorn root, pulsatilla, Jamaica dogwood and figwort. Somewhat less active were valerian and lady's slipper. The drugs having very weak actions were wild yam, life root and skull-cap. Blue cohosh was most active and put uterine strips in a state of tonic contraction or tetanus. The following drugs were quite inactive: black haw, cramp bark, squaw vine, chestnut bark, false unicorn, passion flower, blessed thistle, St. Mary's thistle and motherwort. The authors are confident that the actions observed would also be produced in the intact human uterus provided the drug reached the uterus in a similar concentration but that it is improbable that the concentration of drug used could ever be attained in the body. Work which is under way indicates that these drugs do not act specifically on the uterus but on smooth muscle in general and that this general action would overbalance any favorable action on the uterus. The authors conclude that the drugs examined are practically worthless and that their use is harmful as well as futile since such use tends to perpetuate therapeutic fallacies (*Jour. A.M.A.*, Aug. 12, 1916, p. 490).

Radio-Rem.—The Council on Pharmacy and Chemistry reports that those who are well informed on the subject of radium therapy are of the opinion that the administration of small amounts of radium emanation, such as those generated by certain outfits, is without therapeutic value. Having voted not to admit to New and Nonofficial Remedies any radium emanation generator which produces less than two microcuries of emanation during twenty-four hours, the council voted not to accept Radio-Rem outfit No. 3, Radio-Rem outfit No. 2 and Radio-Rem outfit C., each of which is admitted to produce less than two microcuries of emanation per day (*Jour. A.M.A.*, Aug. 19, 1916, p. 631).

The Journal
OF THE
Michigan State Medical Society
ISSUED MONTHLY UNDER THE DIRECTION OF THE COUNCIL

Arthur M. Hume, Chairman Owosso
Guy L. Kiefer Detroit
W. J. Kay Lapeer
W. J. DuBois Grand Rapids

EDITOR
FREDERICK C. WARNSHUIS, M.D., F.A.C.S.
Grand Rapids, Mich.

All communications relative to exchanges, books for review, manuscripts, news, advertising, and subscription are to be addressed to Frederick C. Warnshuis, M.D., Powers Theatre Building, Grand Rapids, Mich.

The Society does not hold itself responsible for opinions expressed in original papers, discussions, communications, or advertisements.

Subscription Price—$3.50 per year, in advance.

October.

Editorials

INFANTILE PARALYSIS.

We recognize that the city of New York and vicinity and in some of the other eastern communities the epidemic of infantile paralysis has been a matter of serious moment and concern. Health authorities and civic officials were confronted with a formidable task to arrest its spread and to effectively cope with the perplexing problems that presented. Newspaper reports of the number of cases, deaths and extension of the disease were characterized with "scare-heads," reporter's "playing-up" features and conjectures. These newspaper stories were the means of striking fear to many a mother's heart and needlessly created many anxious days and weeks of intensive watching for the first symptoms of the disease in her children. American-like, reporters in communities far distant from New York, called up their local physicians inquiring whether any cases of the disease had appeared in their vicinity. Finding none they would seek to incite local interest by publishing interviews with local health officers and after enumerating symptoms, etc., they would publish more "gush" as to how Health Officer "So and So," or, the Local Board of Health were feverishly awaiting the report of the first local case and the steps that would be taken to prevent the spread of the disease. Then there would follow advice, preventive measures, etc., etc., and for days local interest would be stimulated and parent's fears for their offspring's welfare aroused. If Johnny wakened at 2 a. m. with a "stomach-ache" (due to unwise indulgence) the doctor must come because the fear existed that Johnny might be coming down with infantile paralysis. From the clippings received we do not believe a single community in this state escaped such experiences nor did a single newspaper refrain from using an unnecessary amount of ink on bold face type. We regret also that some of our doctors, eager to pose before his community as an alert diagnostitian, were eager to be the first to discover a case in their practice. In his eagerness he forgot his differential diagnosis and under the "spell" pronounced a case of meningitis of other etiologic origin as infantile paralysis. As a result reports soon came of cases here and there and the newspapers burst out afresh in black type with the news that at last the disease had appeared locally and that Dr. "———" had found little Mary Jones ill with infantile paralysis. (Poor Mary had tubercular spinal meningitis). In a day or two Dr. "———" not to be outdone by his colleague, sends in a report that little Willie Brown, is a victim of infantile paralysis. Then daily from here and there came reports of cases—we wondered how many were really infantile paralysis. Now, mind, we do not assert that there were no genuine case—we believe there were, as this state has had cases reported to health officers every year and which were true instances of typical afflictions. We do assert, however, that a goodly number of the cases reported as infantile paralysis were improperly diagnosed and that Michigan had but comparatively few genuine cases. In one community we investigated five cases of what were reported by physicians to be infantile paralysis. As a result, after laboratory analysis, they were found to be: Tubercular meningitis, two cases; pneumococcus meningitis, one case; simple meningism, one case; spontaneous recovery without any findings or paralysis, one case. Five reported cases and none of them correctly diagnosed—but reported to comply with public excitation. How many more were there of similar nature? We believe further comment unnecessary. As doctors and as guardians of public health, may we strive to maintain a calm state of mind and cool, deliberative diagnostic acumen.

"WHAT OF THE WINTER?"

A heavy thunder and rain storm is raging without and in the several minutes of darkness

between extra severe crashes when the lights went out by reason of "blown-out" fuses, we were led into a musing trend of thought with the question foremost—"What of the winter?" We did not think of the deep snows, the bitter cold or the long hours of increased work. Neither were we brooding over unfilled coal-bins and empty vegetable cellars. We were, however, concerned in regard to what the spring would reveal in the way of a credit or debit record as to what we as physicians of Michigan achieved in organization work, society activities, professional advancement and professional knowledge. Would we still be traveling along in a groove or would sufficient energy manifest itself to turn us out of beaten paths and create renewed life and co-operative efforts to attain a higher plane of efficiency? Would we exhibit sufficient interest to cause an influential expression of opinion to be heeded by our legislative solons in matters of health legislation and the pursuit of a sane course in social insurance provisions? Would we devote sufficient time to fostering the objects of our county societies and the doing of our part in obtaining their realization? Would we be earnest, honest, active physicians and surgeons profiting by the experiences encountered and emerge, at the end, better and abler physicians?—What, oh what, would the winter's close and spring's awakening reveal? Who would come? Who would go? Who would profit—who would lose?

The penetrating lightning did not impart a prophetic glimpse or view and naught was revealed as to "what of the winter's" end the record would impart.

However, the distant and lessening thunder's rumble, the cricket's song and the tree-toad's croak that were wafted in as the windows were again raised, brought again new inspiration and the old confidence that come what may, the profession of Michigan would not be found wanting. We indeed urge that you who read may be actuated, by this digression, to increase your interest, your activity, your enthusiasm in your County Society, your local problems and those of your state organization. By doing so we need not pause to ask "What of the Winter?"

THE JOURNAL.

With the issuance of the November and December numbers we will have completed four years of editorial direction of *The Journal*. We believe that we have conscientiously and consistently striven to make its every issue carry something of intrinsic value and interest to our members and readers. We have striven to serve the wants and desires of the diversified interests of all. We also believe that in a measure we have succeeded but we are not by any means satisfied or content—the laurels that may have been won are not sufficient to form a soft pillow to contentedly repose upon. As a new volume will be commenced with the January issue we are appealing to our members to send us their criticisms and suggestions. Please tell us wherein we are lacking, how we may institute new features, what course should be pursued, what should be changed, what will make it more valuable to you? What do you need? What kind of articles and editorials do you want—how many in each issue? True we have had some commendations and some very pointed and just criticisms—we have tried to profit by them. They were appreciated but now we want some representative wholesome criticisms and constructive suggestions. May we not be favored by *your* opinions?

We are desirous and eager to make the next volume of distinctive interest and intrinsic value to the greatest possible number of our members. To do so successfully we solicit your co-operation and personal interest. Do we get it?

SIGNED EDITORIALS.

With the desire of causing *The Journal's* editorial pages to be representative of the opinions, viewpoints and position of the entire profession of the state we are requesting that our members submit signed editorials for publication. The restriction imposed are that these contributions must not exceed 1,500 words; they must be devoted to medical or surgical topics or those subjects that are of interest and concern to the profession. The Publication Committee will exercise its right to reject any contribution that they deem of insufficient merit or interest.

May we not have a spontaneous response to this request and thus be assisted in causing a new interest to be aroused in *The Journal* by the establishing of this new feature of editorial discussions?

CHANGE OF ADDRESS.

Secretaries and members will please address all communications to *The Journal*, Editor or Secretary to Powers Theatre Building, Grand Rapids. The offices of *The Journal* and the Secretary have been moved from 91 Monroe avenue to the above address. Kindly bear in mind this request in all future correspondence.

Editorial Comments

October- vacation days gone by—ready for work. What are you planning to do for your local Society; what are you personally going to do to make its meetings this winter yield to you and your associates a satisfactory revenue? We desire at this time to remind you that it rests solely with you to determine whether your county society will merely exist or become an active, profit sharing society.

We endeavor to keep our mailing list corrected to date from notices received of changes of residence but every month we receive a number of cards stating that *The Journal* addressed to "Dr. ———" cannot be delivered by reason of "no such number," "moved," or unknown." Then two or three months elapse before we receive a letter from the doctor asking why his *Journal* is not sent him. Please remember to inform us whenever you change your residence.

Our members are reminded that the House of Delegates increased the annual dues from $3.00 to $3.50 per year. The reasons for doing so may be found in the minutes of the last session of the Council as printed in the September issue and County Secretaries are reminded of this increase when collecting 1917 dues.

Wanted—A host for our 1917 Annual Meeting. The Secretary will be pleased to present invitations extended to the Council for acceptance.

President Biddle's Committee appointments for the present society year were published in the last issue and will be found in all future issues in the forepart of our advertising section. These committees are not ornaments of organization. They should be active, potent groups of selected individuals devoting time and energy to the tasks assigned them. The President urges that they be alert and active in order that their annual reports may reveal definite accomplishments.

The Medico-Legal Committee conducts the necessary steps in the protection of our members threatened with or sued for alleged malpractice. We desire to again call attention to the necessity of promptly notifying this Committee's representative in your local society should you need this protection. Your local representative will promptly place the matter before the Chairman of the State Committee. Members are urged to be guided by the instructions given by the local representative.

One more request and we will cease our comments on society affairs for this issue. In order that we may outline our editorial plans we request that the members who read papers at our Houghton meeting please send in their manuscripts so that they reach this office not later than October 15.

With "Infantile Paralysis" and "Railroad Strike" newspaper scareheads cast into discard we can again turn our attention to the "High Cost of Living" and the "European War" and possibly attain a concerted action in medical economics. You cannot, under present conditions, exist or thrive on 50 cent office and $1.00 house visits. If your services are worth anything they are certainly meriting a monetary remuneration of $1.00 to $2.00 for office visits and $2.00 to $3.00 house visits. Simply tell your patients that it costs more to be sick just as it costs more for every other class of service or commodity. Of course we are as ready and willing as ever to do charity work when deserving.

We cannot desist congratulating the Indiana and Ohio doctors on their having such splendid publications and their good fortune and foresight in selecting such capable editors. There are a goodly number of excellent state journals but these two represent and reflect a progressive profession and keen businesslike and commanding editors. We bow again in respect and admiration.

Unless there is witnessed a greater and intensive coordinated effort of the state profession for the protection of their interests and rights we are bound to speedily realize a curtailment of these rights by legislative enactments. Medical practice conditions are rapidly changing and innovations are rapidly being proposed and adopted. It is incumbent upon you to become actively alert and aggressive if you do not wish to cause the next ten years to witness the demise of the family and independent physician. You have vital interests at stake; you can ill afford to neglect them.

With the end in view of preparing some interesting information and data we will mail in the near future, a questionaire addressed to each member. We here request that on the receipt of this blank you will promptly answer each question in fullest detail. When the results are compiled we assure that no names will be mentioned nor will any personal comments be indulged in. Don't lay the blank aside—fill it out and return immediately.

Correspondence

Charlevoix, Mich., Sept. 9, 1916.

Dr. F. C. Warnshuis Secretary, Grand Rapids, Mich.

Dear Doctor: Veni, vidi, vici. I came, I saw, I conquered. We have met the enemy and they are ours. In other words Doctor, the celebrated Russell case vs. Wilkinson again came to trial and thanks to the Michigan State Medical Society through its counsel, Herbert V. Barbour of Detroit, the dead are lying in mangled heaps on every side—figuratively speaking, today.

The plaintiff wanted Judge Sullivan to preside and we wanted Judge Mayne, present candidate for the Supreme bench, on the ground that he was better qualified from experience in malpractice cases to conduct our case.

Plaintiff's attorneys had us in a hole and so we went ahead with Judge Sullivan of Muskegon. We found him absolutely unbiased in every particular and followed the law to the letter throughout the case. The expert shipped in from Detroit by plaintiff for a $50.00 fee failed to tell the jury in what

particular I had failed to give proper treatment which fatal error on part of plaintiff—after a deluge of "sob-stuff" to the jury—the good Judge carefully explained to the jury in his final charge was necessary to make their case according to law. This of course was tantamount to directing a verdict in favor of the defendant. The jury promptly retired and came back as soon as they could take a ballot with the cheering verdict "No cause for action." Of course the same old story of a shyster lawyer and a bad end result following a burn on a baby's hand with its subsequent contraction following for a long time after treatment had been suspended made the dismal combination which was supposed to mulct the doctor out of his hard earned savings. This is the fifth or sixth malpractice case brought in this county (Charlevoix) in the past three or four years, against the doctors of the county, and there are only about a dozen of us in the entire county. This naturally began to make the doctors of the county dread taking a case which might turn out badly in spite of all the doctor might do. Members of the A. C. E. Medical Society (Antrim, Charlevoix, Emmet) stood by like old time minute men ready to jump at any chance to give me any assistance in their power to a man. Notably among the number to render splendid service on the witness stand were Doctors John Reycraft, and Witter of Petoskey, Conkle of Boyne Falls and last but not least my own loyal co-practitioner, Dr. R. B. Armstrong of this city. These two trials of this case must have cost the plaintiff's attorneys around $500.00 as the plaintiff himself had nothing. My entire expense has been bourne by the State Society (my Medical Protective Policy having run out). So now I am inclined to think that the local shysters will lay low awhile and allow the doctor's to attend to their practice.

A. M. Wilkinson.

Deaths

Dr. F. D. Smith of Coopersville died August 19. He had been ill for three years and was 71 years old. He was a member of the Masons and Odd Fellows.

State News Notes

HALF A CENTURY'S PROGRESS.

October, 1916 points an epoch in the history of Parke, Davis & Co. The house was founded in 1866—just fifty years ago this month—largely upon the optimism of three or four determined men, backed by a capital that would seem insignificant today. There was nothing in its unpretentious origin to foretell the success of after-years. And by success we mean not merely material prosperity, but also that broader and more enduring success that is based upon good-will and confidence.

Manufacturing pharmacy was then a crude, imperfect art. Bacteriology, pharmacology and biological pharmacy were as yet unborn. There were no curative sera or vaccines in those days. Prophylaxis was in its infancy. Standardization was unknown.

Fifty years have wrought marvelous changes in means and methods for the treatment of human ills. The materia medica has been amplified beyond the dreams of the earlier investigators. Knowledge of pathology has immensely broadened. The empiricism of the past has given way to rational therapeutics, and medicine is taking its rightful place among the sciences.

In all these forward movements Parke, Davis & Co. have had some part—notably as discoverers of new vegetable drugs, as inventors of new chemical compounds, as pathfinders and producers in the field of biological manufacture, as investigators in original research, as pioneers in both chemical and physiological standardization.

The past half-century, as we have intimated, has been remarkable in its contributions to the newer materia medica. What will the next fifty years bring forward? Time alone can write the answer. Ours is a progressive age. The science of medicine has not reached its highest development. The physician's armamentarium will be further enlarged and fortified. New remedial agents will come into being. Many existing products will be improved. And with the fufillment of these conditions, Parke, Davis & Co. (if we may judge the future by the past) are certain to be identified.

Dr. I. J. Stoner, of Osseo, has purchased the practice of Dr. H. M. Warren of Jonesville. Dr. Warren retires after fifty-two years of continuous practice and October first will depart for Berkeley, Calif.

Dr. P. M. Crawford, for the last three years assistant physician at Oak Grove Hospital in Flint, has resigned. Dr. Crawford intends to locate in Chicago.

Holland citizens are agitating the establishment of a local hospital.

Dr. Harold S. Hulbert announces the opening of his office in Suite 805, Kresge Building, Detroit.

Dr. J. H. McCall of Detroit has located in Lapeer.

County Society News

SANILAC COUNTY

Sanilac County Medical Society held its first monthly meeting, at Lexington Beach, Tuesday July 18, 1916. The meeting was of a social as well as a professional character. The doctor's wives and the doctors of St. Clair, Lapeer and Huron, County Societies, and their ladies. Doctors L. J. Hirschman, W. A. Hackett, J. E. Gleason, of Detroit were the invited guests. Before the meeting the doctors and ladies spent a short social time visiting on the Beach, and at two o'clock sixty-five sat down to a delectable dinner served by the ladies of the Episcopal Church which disposed of was followed by the reading and discussing of papers that were both timely and practical.

Dr. Neil J. McColl, President of the Society presided.

The usual order of business was dispensed with. The social features were interspersed by the following program: Dr. L. J. Hirschman, Detroit, gave an enlightened talk on "Colonic Constipation," discussion lead by Councilor, Dr. W. J. Kay, Lapeer. Dr. W. A. Hackett, Detroit, gave a splendid and comprehensive paper on "Ulcer of the Stomach," discussion lead by Dr. B. E. Brush, Port Huron, and Dr. J. H. Burley, Almont. Dr. J. E. Gleason, Detroit, gave a very interesting talk on, "The Cost of a Medical Education," he also demonstrated his method of "Enucleation of the Tonsil." All papers were vigorously discussed.

J. W. SCOTT, Secretary.

Book Reviews

GOULD AND PYLE'S CYCLOPEDIA OF PRACTICAL MEDICINE AND SURGERY, with particular reference to diagnosis and treatment. Third Edition, Revised, Enlarged. Cloth, 633 illustrations. Price $12.00. P. Blakiston's Son & Co., Philadelphia.

This is a handy volume, concise and authoritative, that presents the most important facts in all branches of medicine and surgery that are of working value to the practitioner. It also serves as a trustworthy handbook for easy and rapid reference. Numerous well-tried and valuable formulas are distributed through the volume.

The new revision has retained the old plan and provided opportunity for inserting new articles on recent developments in medicine and surgery.

The volume is one that will be of material assistance to the student, specialist, surgeon, practitioner and a trustworthy guide.

THE PRACTICE OF OBSTETRICS. Designed for the use of Students and Practitioners of Medicine, J. Clifton Edgar, Professor of Obstetrics and Clinical Midwifery, Cornell University Medical College. Fifth edition revised; 136 illustrations, five colored plates and thirty-four figures. Printed in colors. Cloth, 1067 pages. Price $6.00. P. Blakiston's Son & Co., Philadelphia.

This fifth edition incorporates new articles on painless labor, twilight sleep, pituitary extract in uterine inertia and the artificial feeding of infant.

This text has been so well known and authoritative for a number of years that its revision to date causes it to become our foremost text on obstetrics. It is indeed the volume that should be on the reference stand of every practitioner.

A PRACTICAL TREATISE ON DISORDERS OF THE SEXUAL FUNCTION IN THE MALE AND FEMALE. Max Huhner, M.D. Cloth, 318 pages, illustrated. Price $3.00. F. A. Davis Company, Philadelphia.

A volume that discussess the subject under consideration, understandingly, clearly and from a scientific standpoint.

A MANUAL OF OTOLOGY. FOR STUDENTS AND PRACTITIONERS. By Charles Edwin Perkins, M.D., F.A.C.S., Professor of Clinical Otology in New York University and Bellevue Hospital Medical College; Associate Aural Surgeon to St. Luke's Hospital; Assistant Aural Surgeon, New York Eye and Ear Infirmary; Fellow, American Otological Society, New York Otological Society, New York Academy of Medicine, etc. 12mo, 445 pages, with 120 engravings. Cloth, $3.00 net.

Diseases of the ear have assumed a major importance within recent years, largely because of the physiologic and pathologic relations that have been established between the ear and its adnexa and the brain; and also because of the growing role played by the infectious micro-organisms in ear diseases. Moreover, diseases of the ear are among the most common of the special sense disorders with which the general practitioner has to deal, and it is very essential that he should be up-to-date in his practical knowledge of the subject.

The author's long and very full experience both as a specialist and teacher has enabled him to produce a book which covers the subject completely and in a clear and concise manner. The handy size of the manual commends it for students' and practitioners' use; and nothing essential to a thorough understanding of otology has been omitted.

The prominence given to the five characteristics of the membrane (color, luster, position, integrity and structure) in the chapter on the examination of patients and the clarity with which the changes in otoscopic appearances are pointed out in the consideration of diseases of the ear should enable the reader to cultivate a systematic method and to form his diagnosis more readily.

The sections on the inner ear give the present knowledge of the subject and are based largely upon the author's personal experience. The relation of the Chorda tympani nerve to facial paralysis and middle ear disease—not clearly given in any book on otology—is here given in detail and represents the author's own observations.

Perkins' Manual of Otology represents the present status of this specialty, clearly set forth in practical, ready-to-use shape. It is a guide which can be followed by the student in college and by the general practitioner, as well as by the specialist, with both pleasure and profit.

THE CLINICS OF JOHN B. MURPHY, M.D. at Mercy Hospital Chicago. Volume V Number 4 (August, 1916). Octavo of 222 pages, 59 illustrations. Philadelphia and London: W. B. Saunders Company, 1916. Published Bi-Monthly. Price per year: Paper, $8.00, Cloth, $12.00.

Received.

THE MEDICAL CLINICS OF CHICAGO. Volume II Number 1 (July, 1916). Octavo of 220 pages, with 41 illustrations. Philadelphia and London: W. B. Saunders Company, 1916. Price per year: Paper, $8.00, Cloth, $12.00.

Received.

ELSBERG'S SURGERY OF CORD by Charles A. Elsberg, M.D. Professor of Clinical Surgery, New York University. Octavo, 330 pages, 153 illustrations, 3 in colors, cloth. Price $5.00. W. B. Saunders & Co., Publishers, Philadelphia.

This is the first text book devoted exclusively to the diagnosis and treatment of all the surgical diseases of the spinal cord, and its membranes. It at once appeals to the general practitioner, neurologist and surgeon because of its thorough and clear discussion of symptomatology, diagnosis indications for operation and operative technic.

The work is divided into three parts: The first to anatomy, physiology and symptomatology; the second discusses operations upon the spine, cord and nerve roots; the third is devoted to surgical diseases of the cord and membranes and their treatment. There is also a chapter on X-ray in spinal diseases.

The author's extensive experience at once causes this monograph to become an authoritative reference and guide. It presents each detail in a clear and definite language. We are deeply impressed by this scientific presentation of the subject and congratulate the author and publishers on its production.

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Original Articles

AGE AND ARTERIAL DEGENERATION.*

BENJAMIN A. SHEPARD, M.D.
KALAMAZOO, MICH.

The terminology of arterial degeneration in its various forms has been such that it has been confusing; arterio-sclerosis, artheromatosis, atheroma, arteritis deformans, endarteritis, nodosa, and peri arteritis being used interchangeably.

Bishop introduced the term "cardio-vascular disease" to cover a clinical syndrome including diseases of the heart, arteries and such co-related conditions as kidney degeneration. The term is meaningless so far as designating any definite pathology or giving any representation of a clinical entity.

Within the last few years the discussion in medical literature of the various phases of arterial hypertension has been very extensive. Nevertheless various phases of the etiology and pathology seem not to be definitely determined. In this paper I have chosen to discuss the various phases of arterial degeneration.

In the beginning it is well that we consider the structure of the blood vessels of which the heart is only a modification. From the aorta down to the tubes of microscopical size, the entire vascular system is lined by a single layer of flattened epithelial cells united by a so-called cement substance. The remaining structure of the artery or arteriole varies according to the age of the individual and the size of the vessel. The wall of the vessel has been divided into three layers partly for convenience and partly because of the evidence of an anatomical division. That I may lay a foundation for what I shall say later in regard to the changes in the artery in later life, I wish to refer to the description of the radial from birth to old age by Thayer and Fabyan and quoted by Hirschfield:

At birth the artery (referring to the radial) is delicate, translucent, extremely thin and collapsing. The surface on opening is perfectly smooth. The intima consists of a single epithelial layer lying directly on the surface of the deeply undulating elastica interna. The media which consists of transversely arranged smooth muscle fibres with rather large vesicular nuclei, has a depth of seven to eight layers of cells. Connective tissue if present in the intima and media is extremely scanty, none being revealed by the Mallory and Van Gieson stains. There is however a relatively large amount of elastic tissue which appears on cross section as very thin, parallel slightly wavy lines. The elastica externa is neither as coarse nor as deeply undulating as the interna.

"The adventitia consists of compact connective tissue fibres with relatively large nuclei. The elastic fibres are fairly numerous. By the middle of the first decade the intima has become thicker owing to the appearance of a fresh layer of elastica interna, while more muscle fibres appear in the media.

"10-20 years. Walls of vessels become thicker but still collapsed. Intima and media thicker, the elastic tissue being relatively less marked.

"21-40 years. Slight further general thickening of intima and media. A second elastic layer appears in the intima. In the media the connective tissue begins to be demonstrable by Von Gieson's stain.

"41-50 years. Decided change. Lumen of the vessel remains open. Areas of calcification in the deep layers of the intima are frequent. The media reaches its maximum thickness. There is a great deal of connective tissue.

"After the fifth decade there is a progressive increase in the thickness of the intima and a diffuse connective tissue thickening becomes the common type. The media after the fifth decade becomes on the whole rather thinner; there is a marked increase in the connective tissue.

"Calcification in the deep layers of the intima become more common with age, four out of five cases in the eighth and ninth decade showing this change.

Thus we see a usual progressive change in the walls of the arteries all of which is not pathological nor are all of the preceding changes normal but the line of demarcation is one over which various observers disagree.

Attention in the past to sclerotic changes in the artery has largely centered about the intima and various have been the theories as to the causes of changes therein, thus Rokitanski be-

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lieved that cells were deposited directly from the blood stream upon the intima; Virchow believed that there was some formative stimulus and that the thickening was an inflammatory hyperplasia; Thoma maintained that the thickening was a compensatory thickening of the vessel wall to diminish the lumen of the blood vessel, the increase of which was due to increased blood pressure; this presupposes that the increased blood pressure ante-dates the beginning of the thickening.

At the present time we, of course, recognize the frequent association of the two but most of us reverse the order. All these men as we have seen looked upon the intima as the location of the primary changes but Koster and others maintained that the degenerative changes of arterial wall had their origin in the adventitia and infiltration from there to the media through the vaso-vasorum. Koster determined that except in the brain and lungs the vaso-vasorum do not pass deeper than the outer third of the media but in the brain and lungs there was a fine capillary net work penetrating the deeper layers of the media and along the medial surface of the elastica interna—this is of special interest in the study of brain syphilis. A close study of the structure of the artery, especially the media, is held by some to argue against the theories brought out of degeneration of the whole wall due to direct irritation of the intima from the blood stream. My own view is that the etiological factors, by this meaning the toxic agents either chemical or bacterial, may come either through the blood stream in the lumen of the artery or through the vaso-vasorum, the latter I believe the principal source especially for bacterial factors. Thus I believe that most bacteriological degenerative changes originate as a mesarteris rather than an endarteritis.

A study of the tunica media or middle coat may be of value here. In this coat the muscular tissue predominates except in the larger arteries where elastic tissue appears to be in excess of the muscular. The smooth muscle fibres of the media are circularly disposed, are short and of irregularly serrated outline, being intimately connected with another often possessing short branches which interdigitate with one another. In the larger vessels they are arranged in layers which alternate with the elastic tissue. This coat is almost invariably the thickest of the arterial coats though in a large vessel the outer coat or adventitia is nearly or quite as thick but in the smaller vessels it is much thinner than the middle coat. The external coat consists chiefly of fibrous connective tissue with relatively few elastic fibres and these mostly adjoining the tunica media. Small blood vessels, both arteries and veins, the vaso-vasorum and fine nerve fibres which have occasional ganglia, penetrate the wall and from these nerves and blood vessels, fine nerves and capillaries are distributed to the muscular part of the media. For the most part, being limited to the outer two-thirds of the media no blood vessels being found in the intima.

As an etiological factor syphilis is the most frequent of any of the factors which are definitely known to be in themselves solely responsible for arterial degeneration. It was noted in the early part of the nineteenth century that there was an association of aneurysm and weakening or the arterial wall with syphilis and it is now recognized that these lesions were usually confined to definite zones of the aorta, most often to the sinuses of Valsalva or encircling the first part of the aorta or they may sometimes be found in the transverse arch or even in the descending aorta just above the diaphram.

They are as described by Koster as a sleeve like infiltration about the vaso-vasorum in which as has been demonstrated, the spirochetes lodge in the vessel wall. At first small areas of necrosis occur and according to Wright the spirochetes are most numerous in these areas of necrosis and he believed that they rapidly multiply here producing the necrosis and then that they degenerate and disappear.

This necrosis is especially marked in the elastic and muscle tissue of the media which break up and are absorbed. This area becoming infiltrated with lymphocytes, plasma cells and a few giant cells and miliary gumma, the cellular infiltration is replaced by fibroblasts and these in turn by fibrous tissue. During the latter part of the process, the spirochetes have disappeared and as we have seen, the process has become one of repair such as we see in other parts from the various causes. The intima may show damage done and even plaques but usually the result of extension from the lesion surrounding the vaso-vasorum and not direct from the blood stream. Thus the muscle is fragmented or entirely destroyed and were we to open, the healthy muscle areas would appear as regions of depression while the weakened walls of the vessel protrudes and it is this form of arteriosclerosis which produces aneurysms, for in the early stage of endarteritis we still have the normal muscle and elastic tissue to

withstand pressure which it will do better than the scar tissue.

When blood is circulating through the artery, the scar tissue produces a bulging while the normal muscle and elastic tissue which are stronger, retain the position of the arterial wall in its normal relation. If the condition is an endarteritis, patches of epithelium become thickened and soon undergo granular and fatty degeneration; the patch is later transformed into a yellow opaque nodular mass containing cholesterin, fatty granules and crystals, and is separated from the blood current by a thin pellicle. The lumen is diminished by this atheromatous mass.

Later calcium in combination with the fat form calcium soaps and then calcium deposits take place by the breaking up of the soaps, the calcium combining with carbonic acid and phosphoric acid radicals from the blood, forming insoluble calcium carbonate and calcium phosphate. The degeneration proceeds outward and hypertrophy of the connective tissue takes place while the muscle tissue wastes. Later calcareous deposits occur in the outer coat. Another cause of waste in the muscle tissue lies in the fact that as the endarteritis progresses, the lumen of the vessel is encroached upon in the terminal vessels and the vaso-vasorum receives a lessened amount of blood with which to supply the main vessels and as a result a waste takes place in the muscle tissue, it being replaced by fibrous tissue which requires less blood supply. This is the usual course in circumscribed arteriosclerosis of the inflammatory type.

The process of fibrosis may also show obliteration of the vaso-vasorum and the whole thickness of the arterial wall may be cut off and atheroma with a gradual deposit within the artery causes endarteritis coming from a mesarteritis.

It is quite generally believed by observers that mesarteritis due to lues, is likely to affect the first part of the aorta but it may and has quite a tendency to extend down the sinuses of Valsalva and here produce constrictions about the mouths of the coronary arteries and result in weakening of the myocardium and angina. Often the process covers the cusps of the aortic valves themselves, causing a deformity and shrinkage thereby giving rise to an aortic insufficiency. And here I may add that in every case of aortis insufficiency, the possibility of syphilis as an etiological factor should be considered. Another frequent zone in which mesarteritis produces results is just above the diaphram where a band is often found. It is from the latter location that aneurysms of the descending aorta often arise. Another location where the spirochete is even more found in his destructive work in the artery, is in the smaller peripheral, visceral and cerebral arteries. The process here is similar to that of the aorta except that the process more often extends through the media to the intima producing an endarteritis. Of the other agents which produce arterial degeneration, it is harder to speak definitely though they are as important, as it is probable that in many cases the changes are the results of the action of the agent or agents for many months or years. Of the important ones I would mention the action of chemicals such as men are exposed to in certain vocations —for example: Lead, arsenic and others or the prolonged administration of such drugs as arsenic and the met-products of intestinal putrefaction, and the results of faulty metabolism, as for example, diabetes. Enough attention has not been paid to the deleterious products thrown into the circulation as a result of abnormal work and worry done by the nervous system. This has been shown very nicely experimentally by Crile and I believe every one of us has many opportunities to observe its clinically.

We know that arterial degeneration is more often found in the class of men who carry loads upon their nervous systems. Cannon in 1911 reported that blood obtained from the adrenal vein of a cat which was excited by the presence of a dog, contained more adrenalin than when the animal was quiet. The blood was obtained by a catheter in the vein. This may explain to some degree the physiological process by which degeneration is caused by worry. In addition to this I believe they act by inhibition of some of the normal secretions of digestion and metabolism allowing the production of bacterial toxins and by exhaustion and relaxation the products of katobolism abnormally retained. Local infections which continually feed the system with bacterial toxins, are also a source of the short cut to old age, such as pyorrhea, infected teeth, infected gall bladder, tonsils, etc., with their metastatic foci and the resulting chronic diseases like rheumatism seem to furnish evidence that they produce arteritis, and while changes in the wall have been described as the result of typhoid, toxins affecting all three coats such as swelling and desquamating of the cells of the intima, a softening of the

elastica interna, infiltration of mononuclear cells in the layers of the media and dense infiltration about the vaso-vasorum, it seems to be the verdict of several men who have given the subject much study that it not only produces immediate lesions, but lowers the resistance of the wall to subsequent deleterious agents. In scarlet fever, Klotz has found small areas of necrosis about the vaso-vasorum in the media which have been obstructed by agglutinative thrombi; these he says, on the subsidence of the infection, are replaced by areas of fibrosis. Similar changes are claimed to take place in other infectious diseases. Thus we see that though we have been inclined to speak of arterial sclerosis as a disease of the aged it is really not, but in the aged we see the after effects, and the real process has been in action during early life.

A recent theory ascribes hyperactivity of the adrenals as important in the production of arterial degeneration. A contraction of the arterioles is produced and consequently the vaso-vasorum receives a diminished amount of blood and the vessels are insufficiently nourished. Experimentally produced changes in the lower animals are not to be considered identical to that in the human. It is supposed that the action of nicotine in exciting the action of the adrenals, explains the increase in arterial degeration in smokers. It is possible for intestinal putrefaction and bacterial products from other sources, to act both upon the vaso-vasorum and upon the endothelium of the intima. The theory of lime retention seems to me as "far fetched." Lime deposits occur late in the disease.

Romberg maintains that sclerosis may develop in blood vessels subject to oscillations from low to high blood pressure such as in the arms of workingmen and also that this may explain the fact that sufferers from migraine sometimes manifest sclerosis in the arteries on the side of the head affected. This may also be a guide post in reaching a conclusion regarding cerebral sclerosis in brain workers. The writer believes that the products of the (increased metabolism should be considered a factor. It has been suggested by Gaskell and Langley, that vascular dilatation in "muscle and perhaps elsewhere" might be due to products of metabolism formed by the activity of the tissue and Gaskell later showed that dilatation of the vessels of a frog was caused by applying lactic acid and that even in very low cencentration, acids tend to produce vaso dilatation.

Bayliss showed that lactic acid and carbonic acid were equally effective in producing vasodilatation. Others have shown that it is produced by the weak acids resulting from cellular activity within the organism.

Verworn stated a rule that:

"The increase of the blood supply in a functionally active organ, must be based on the physical self regulation which takes place as a result of the fact that metabolic products of the tissue cells influence the cells of the vessel walls in that part so that the vessels dilate and lymph is formed."

It has been shown according to Starling that lactic acid or carbon dioxide present in the blood causes a marked dilatation of the blood vessels of a limb. He has since shown experimentally that carbon dioxide is effective in producing dilatation of the coronary arteries and of the heart itself. Under physiological conditions it is increased during the dilatation. Under abnormal conditions it is first increased and then slowed. This should be considered when studying etiological factors in thrombosis. Under physiological conditions then, an increase in any part of metabolites, produces change in the blood vessel walls with dilatation which make possible a more rapid flow of blood together with an increased amount of oxygen delivered to the tissues, also with an increased water supply. Increase of carbon dioxide or decrease of oxygen in the blood are said to be productive of cellular swelling and that the blood corpuscles vary in volume according to the carbon dioxide content. Bence has shown that in the presence of carbon dioxide the blood corpuscles take up water from the serum and thus changes are constantly taking place between the corpuscles and the plasma according to the carbon dioxide volume assumed during the passage of the blood through the systemic circulation and the exchange for oxygen during the pulmonary circulation. Evidence has also been produced to show that acids bring about an increased viscosity of the albumen, that the ionization of albumen is increased by acids and that acid albumen-ion shows a higher viscosity than albumen not associated with the acid ion. Adam reports that the saturization of the blood with carbon dioxide produces a maximum viscosity which the carbon dioxide is replaced by oxygen, sinks to minimum, increasing or diminishing according to the relative amounts of these two factors. Hoeber maintains that the carbon dioxide content runs parallel with the hydrogen in concentration. Adams' observations have been confirmed by a number

of other observers. It is probable that in endarteritis some mechanical obstruction is offered to the free flow of blood by the roughening of the intima. Some very interesting blood pressure studies have been made in connection with gymnasiums and the temporary increase in the blood pressure which soon falls to normal or below, is probably due to the carbon dioxide content of the blood and nerve stimulus. It seems to me that recent investigations as to the effect of carbon dioxide on the circulation smack of the possibility that direct injurious effects to the vessel wall itself may be another result.

The earliest symptoms relate to the tissues affected by the impaired functions of the degenerated vessels. The vessels themselves give no early symptoms. It is often difficult to reconcile the symptoms to the actual exciting cause, the symptoms and the lesions not always corresponding. Increased blood pressure is not a necessary accompaniment of sclerosis of the blood vessels nor is its transitory presence a sure indication that sclerosis has developed. The blood pressure is raised by many diseases, nervous states, and by some drugs without apparent changes in the blood vessels, though if long continued such changes tend to occur. In some diseases and conditions it is probable that the increased blood pressure is due to increased viscosity. A blood pressure which is intermittently high, going up under conditions which ordinarily do not produce high readings, gives us warning of the changes which are taking place. Headaches after smoking, sensory disturbances which occur especially in the extremities and palpitation upon exertion, are often manifestations of changes in the arteries. In some cases the picture is that of renal inadequacy, in others the cardio vascular system may first show symptoms, it may show first noticeable symptoms in the cerebration from disturbances in the cerebral circulation, in still others the blood supply of extremities, with possibly an intermittent claudication; interesting reports have been made of cases of intermittent backache due or supposedly due to sclerosis of the lumbar blood vessels, the stomach or heart muscle may give rise to the first noticeable symptoms. Time does not permit a full discussion of possible renal symptoms but urinalysis with normal findings does not always mean normal kidneys in these cases since autopsy has often shown areas of interstitial nephritis to have been present while the urinalysis has given no clue. Increased excretion of urine especially nocturnal is often a comparatively early symptom. Often from 7 p. m. to 7 a. m. the amount will double or treble the flow during the remainder of the twenty-four hours. Examination of the urine at this early stage generally only shows a lowered specific gravity. In the advanced stage with sclerosis so that the flow of blood is impeded, the urine becomes scanty. Albumin and occasionally casts may be found but are by no means necessary for a diagnosis.

Palpation of the temporals, radials and tibials, offer valuable evidence oftentimes. Retinal findings by competent opthalmologists are important but late.

Venous stasis with palpable liver and pitting of the ankles and legs may occur. Accurate records should be kept of the blood pressure and this should include the systolic and also the diastolic. I have found these readings to be of value several years after they were taken, for purposes of comparison.

The prognosis of these cases is very variable and in each case must be a law unto itself, taking into consideration the organs that in a given case are bearing the brunt of the disease and the etiological factors underlying. Considerable sclerosis is not incompatible with long life if it is mostly in the peripheral regions. It is remarkable what a small percentage die of the kidney lesions as a direct factor. A large percentage die as a result of cardiac incompetency.

Into the treatment of arterial degeneration we have entered little beyond the threshold because of the crowd of possibilities ahead of us in the etiology and pathology and like a belated fire department we are often of little service other than to prevent spreading.

In all forms of infection the effect upon the cardio-vascular system should be kept in mind, not only from the standpoint of immediate damage but also from the lurking behind of bacteria perhaps in foci foreign to the part which bore the brunt of the original infection. The circulatory system should be watched for some time after an infection for changes. Should any occur, a line of moderation in physical and mental activities should be insisted upon and appropriate measures taken for the stamping out of the infection and preventing any unusual strain. In early life, thickenings due to non-sphilitic infection tend to disappear while in early stages syphilitic lesions offer considerable chance for repair.

Careful search in every physical examination

should be made for localized infections, never overlooking the mouth for infected tonsils, gums, teeth, and in the latter being suspicious of every crown until it is proved innocent, as these infections are pregnant with possibilities of destruction in the cardio-vascular system. It is not impossible that some of our cases of extensive arterial sclerosis have had their origin in some long forgotten infection and though Albutt says, the hand cannot be put back on the dial, much may be done to avoid unnecessary strain, and in the avoidance of further damage. Fortunately in many of the cases of this class, pressures are not abnormally high.

In the second class or what I have termed toxic, in contradistinction to direct bacterial infection of the vessel walls, the etiological possibilities are so numerous that no definite measures can be taken against the underlying factors. We may find it in the temperate and the toper, the moderate eater or the gormand. Scrupulous attention should be paid to the secretions of the body and to the gastro-intestinal tract, lest unnecessary loads of toxins enter the circulation. Even after pressure has been reduced one day's constipation may cause the pressure to rise and the heart begin to labor again. The urine should be carefully watched, not simply for albumin which may or may not be present even in chronic nephritis, but a careful watch kept of the amount of solids, toxins etc. Careful watching of the urine for any evidence it may give regarding proteid metabolism, is demanded and in many cases its value is inestimable. There too, is a consideration of gastric ability in the handling of meats, information of which may be gained by stool examination.

The treatment of hypertension is not necessarily the reduction of the high pressure, but may be quite the contrary as in these cases where the cause may not be removed, it will be our task to maintain it; for the proper maintenance of the function of various organs as in cerebral sclerosis and interstitial nephritis, where the increased blood pressure is a vital necessity and where a reduction would only increase our complication. In every case of like cardio-vascular change, nature has set a new minimum mark, below which the equilibrium is disturbed and it is unsafe to go. Too often in the past have ill directed efforts only added to the existing derangement and disease and by untimely efforts to lower the blood pressure. To us appears the task of the reduction of the amount of the toxins within the body and their maintenance at the lowest possible level leaving nature to readjust the blood pressure, which she will do in a majority of cases, according to the need for maintaining the proper balance.

Too often are misery and discomfort and extra hazard, superadded to the already existing derangement, through insufficient knowledge and vain efforts. Luckily this is limited by lack of means and medicaments. The real treatment of senile changes should be and is a part of preventive medicine as will be seen by a consideration of the aforementioned etiological possibilities; but we are seldom counseled by patients below the fourth decade. We have a right to expect future medicine to prolong life through the prevention of and the care for the conditions which determine senile changes.

In our active treatment of the condition as found, the term moderation must apply to its every phase. The mental as well as the physical activities should be well considered. One of the first demands is usually that of toxemia from faulty metabolism and deranged digestive processes and removal of foci of infection. Closely related to this is the action and relation of the diaphramatic muscle with its impaired function and resulting effects on the splanchnic vessels and gastric motility during digestion, together with its effect on the respiration and oxygenation.

Abnormal intra-abdominal pressure demands attention even to the point of surgical intervention when necessary. A high intra-abdominal pressure produces a high position of the diaphram, with a lessened excursion with its decreased aspirating effect on the vena cava. The increased abdominal pressure also has a retarding effect on the returned circulation of the lower extremities, and an increased pressure on the splanchnic vessels. All this increasing the load of an already over-taxed cardiac muscle. Clinical evidences of this condition are those of an insufficient circulation namely, dyspnea of the greater or less degree, aching and possibly swollen limbs, hepatic torpidity and catarrhal gastritis. High among the toxins which cause hypertension, are the purin bodies.

Whenever the proteid metabolism is disturbed or an excess of food containing abundant nucleins is taken, the tissues are flooded with them, hence an over-indulgence of meats is to be warned against; especially is this true of liver, sweet breads, brains, cured meats, sausage, veal, broth, gravies and the like. Many cases are alleviated by reducing or eliminating the NaCL from the diet. On the contrary, care should be taken not to over-restrict the diet since certain muscles and organs are called upon to do unusual work and must be nourished for that work.

In this connection, we also consider those cases which have arterial changes sufficient to impair or retard the proper performance of function, by the various organs, requiring unusual cardiac effort to maintain a working pressure and in which we find a flabby, relaxed abdominal wall, giving deficient support to the splanchnic vessels.

So well known and widely used is the bacillus bulgaricus that I mention it here only to commend it. Saline laxatives may give a temporary relief from any existing putrefactive process which may be taking place in the intestine; but it is held that it creates a more favorable condition for further development because of its increasing the alkalinity of the intestine and hence improving conditions for the growth of putrefactive flora.

These cases should be shielded from exposure to cold and at the same time must have the maximum of oxygen. This can be arranged in most homes so that though the air is fresh it is warmed when it gets to the patients' sleeping room, remembering that these patients have to get up out of a warm bed several times per night to urinate. Especially is this important in cases of coronary sclerosis when a sudden chilling may bring on a fatal attack of angina.

Much has been said on both sides as to the prolonged use of the iodides. In luetic cases its benefit cannot be questioned in the early stages. In other cases in which fibroid changes are occurring I believe it has some effects in arresting progress of the changes and in all cases of high tension I believe it gives aid by reducing the viscosity of the blood.

In those cases showing renal inadequacy, I have seen considerable benefit from the use of the citrate of potassium or sodium. The solids in the urine will gradually increase and then too, it is sudorific in its action.

A CONSIDERATION OF THE ANATOMY AND SURGERY OF THE KNEE JOINT.*

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It has been observed by European surgeons that there is a scarcity of literature in America on the surgery of the knee joint, and one only has to investigate the surgical works of American authors to verify this comment. In a rather thorough search of the recent literature, I have found that the most liberal contributors of this subject have been the English and French, and it is somewhat surprising that American surgeons have given such an important subject so little attention. It is also interesting that the Germans have been slow in the advance of surgery as applied to this joint.

Opening the knee joint was first deliberately performed in 1781 and nothing further was done until about seventy years after when Sir William Ferguson in 1850 revived the operation and put it on a surgical basis. Inasmuch as these were the days before Lister had applied Pasteur's revolutionary principles to surgery, the mortality from this operation was as high as 50 per cent., and consequently intimidated surgeons for a number of years. Gradually however, French, German and English surgeons, and many Americans, began to perform the operation for excision of the knee joint, but it was not until Lister's time that excision became the operation of choice in chronic tubercular disease. About twenty-five years ago excision of the knee joint was much commoner than it is to-day and was greatly overdone, frequently being performed for very minor disorders of the knee joint. At the present time, with other surgical procedures in use, such as drainage, partial excision, mechanical treatment intra-articular medication, arthroplasty, etc., excision of the knee joint is rather rare. It is an operation which is practically limited to adults who are suffering from advanced tubercular disease of the joint. It is interesting to note the change of attitude toward opening the joint which has developed in the last few decades. A very conservative attitude is now taken and surgeons of wide experience believe that the knee joint should never be opened if a cure can be effected in a reasonable time in any other way.

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ANATOMY.

CONDITION IN THE KNEE JOINT IN WHICH SURGICAL PROCEDURE IS INDICATED.

1st. Traumatic conditions.
 a. Fractures and dislocations of the bony parts such as the patella, condyles of femur, tibia and spine of tibia, and traumatic separation of the tubercle.
 b. Fractures and dislocations of semilunar cartilages.
 c. Rupture of external and internal ligaments of the joint.
 d. Bullets, needles, and other foreign bodies in the jaint.
2nd. Tumors, such as lipomata, sarcomata, osteomata, synovial fringes, inflamed bursae and patellar fat pads.
3rd. Infections, by which we mean the involvement of the joint cavity by bacteria.
4th. Operations for the restoration of function in ankylose joints and operation for the destruction of the function in the knee joint.

In any operation upon the knee joint, whenever the joint is opened, the possibility of more or less loss of function must always be considered. This loss of function is almost invariably due to adhesions, the prevention of which is the great desideratum. Much responsibility is placed upon the surgeon who is consulted as to the treatment of the diseased or injured knee joint; for operative procedure on this articulation is one of the most dangerous and responsible operations in surgery. When one looks about him and sees the deformity and the disability which result from disorders of the knee joint, he must admit that up to the present time a high percentage of failure has attended the efforts of the surgeon towards producing a cure. The impairment of function of a joint that is in such continuous use is obviously the cause of much discomfort and humiliation. One may open the cranial, pleuritic or abdominal cavity and subject the parts to considerable surgical insult and the result of this traumatism may be rarely evident, but if the knee joint is subjected to a slight amount of traumatism, a serious impairment of function may result. We urge the practitioner to make a careful study of disease and injuries of this important joint, disorders of which are of such disabling character and so productive of serious economic loss.

Benjamin Tenney (*Annals of Surgery,* 1908) makes an interesting comparison between the adhesion problem in the knee joint cavity and in the abdominal cavity. The abdominal cavity is lined with a serous membrane which is provided with stomata against constantly moving muscles which act as natural drainage pumps. Some parts of the walls and probably of the abdominal contents are always in motion, in spite of which pus may be confined to a very small area. In the abdomen, there are innumerable thin walled blood vessels which can play their osmotic part in the removal of fluid. The knee joint is lined with synovial membrane which secretes a thick lubricating fluid. No suction apparatus has been demonstrated independent of ordinary joint motion, and there is no extensive system of thin walled blood vessels, and infection confined to one part of the cavity does not seem possible. Clinical experience shows that the two cavities react to trauma and infections quite differently. One never sees the abdomen fill up with serum as the result of a contusion or an aseptic operation while a knee joint will become distended from similar causes. No ordinary condition will keep the abdomen distended for several weeks, but blood has been found in the knee joint many weeks after injury, and a gonorrheal infection may keep a knee distended for months. If it is a fact that the natural drainage in the knee joint is so limited, Tenney reasons that it would be a good idea to drain all joints that are opened even after aseptic operations, and he and other modern surgeons advise that in all septie conditions, the joint should be opened, irrigated and drained. A perfectly functioning joint may be obtained after opening and drainage, although sepsis nearly always produces a certain amount of ankylosis. It seems to me that the modern method of treating the knee joint after arthrotomy is a great step in advance in surgery, and that the surgeons of a few decades ago in their attempt to prevent ankylosis actually provoked it.

Fracture of the patella is one of the commonest injuries to the knee joint, and inasmuch as it is usually accompanied by hemorrhage, the modern surgeon believes in an open operation which restores the broken fragments to proper apposition, sutures the soft parts and uses only such ligatures in the joint as will be absorbed. It is never necessary to wire a broken patella, and if there be detached broken fragments, these fragments should be removed. A simple suturing of the periosteum of the patella and removal of the detached fragments is sufficient. Furthermore, the patella is not a necessary part of the knee joint. Early passive and active movement should be instituted in every fracture of the knee joint. Dislocation of the patella must be reduced and the lacerations incident to this injury should be repaired. Murphy has

devised an ingenius imbrication operation for chronic luxation of the patella. He makes an incision into the fibrous layer of the joint capsule and draws the external flap under the internal flap, doing an operation similar to the Mayo operation for umbilical hernia. The external capsule is narrowed well up into the vastus internus and made tight so that the patella cannot slip out of its bed.

Fractures of the condyles of the femur are much more frequently diagnosed since the advent of the X-ray. Frequently a heroic attempt to break up an ankylosed joint results in sub condyloid fracture (E. Auffrect). Sometimes it is neeessary to open up the knee joint and remove or replace a broken fragment in fractures of the condyles of the femur. Fractures of the spine of the tibia, if reduction is impossible, require that the knee joint be opened, proferably in the median line, and the broken fragments, if any should be removed.

Injury to the semilunar cartilages is the commonest injury to the knee joint and may be productive of more annoyance than any other slight injury to the human body. The semilunar cartilages are situated on the head of the tibia and are wedge shaped, being quite thick at their circumferenee and very thin at their inner side. They serve the purpose of shock absorbers in the joint. They are very strongly attached to the head of the bone at their extremities, and but loosely attaehed at the circumference. They participate in all the normal joint movements and permit of considerable latitude of movement during flexion and rotation of the joint. The internal semilunar cartilage is very much more frequently injured than the external, owing to its loose connection with the tibia, its close connection with the internal lateral ligament, and to the fact that the greatest amount of strain is put on the inner side of the joint. These eartilages may be dislocated, the edges may be frayed out, they may be fractured entirely, or be buckled upon themselves; in faet, they may be subjeeted to many different kinds of injury. A very small pieee may be broken off and become a wanderer in the joint cavity, being nourished by the seeretions of the joint and increase so much in size as to lock the joint. A small tendril or fibre no larger than a thread may stretch across the joint and be provoeative of much trouble. Robert Jones has observed that injury to the semilunar cartilages oeeur most frequently when the knee is flexed and the tibia is rotated outward. He states that the joint may not lock until a long time after the original injury. Jones maintains that if an injured semilunar cartilage is rationally treated at the time of initial displacement, it stands a good chance of being completely cured by keeping the leg extended and at rest for at least six weeks. He does not believe in operating on these cases as soon as the injury occurs, but prefers to treat them eonservatively, only believing in operative interference when the disabilities resulting from the injury are recurrent. Other operators of large experience, notably Morrison of England, who has had a large experience with the coal miners of Newcastle, believes in opening the joint immediately after the injury. Murphy states that there are many eases of so-called "rheumatoid arthritis" that are in reality injuries to the semilunar cartilages, which have resulted in a ehronic synovitis. Jones states that a prolonged effusion relaxes the joint and weakens its ligaments, and advises aspiration if the absorption should be delayed; he advises massage for these conditions and makes his patient practiee moving the quadriceps extensor without flexing the joint. In this connection, Friedberg has called attention to the fact that in some unknown way a slight injury to the joint may produce an atrophy of the quadriceps extensor. The patient may not have been conscious of any injury to the knee, or may have forgotten it, and yet actual measurement will show an atrophy of the muscle. Friedberg advises massage of the quadriceps and electricity for this relaxation of the joint capsule. Hypertrophied synovial fringes may be broken or nipped off and may wander into the joint and eause considerable pain and impairment of function. I believe that Robert Jones' position concerning injury to the semilunar cartilages is to be eommended viz., proper reduction, physiological rest eovering suffieient length of time for perfeet repair. Furthermore, operative interference if trouble is continuous or recurrent, especially in men where a strenuous athletic life is necessary.

The erueial ligaments of the knee joint serve the purpose of limiting flexion, extension and rotation of the joint. They help to attach the femur to the tibia and keep these bones in their proper relation. When an injured joint permits of anterior and posterior as well as rotary movement, one is justified in assuming that there has been a rupture of one or both erucial ligaments. Jones states that placing the leg in extension and keeping the limb quiet for a number of weeks will insure a good result. Other surgeons believe in opening the joint and

suturing the ligaments. R. E. Kelly, (*Liverpool Medical Chirurgical Journal,* 1913) reports a case of injury to the knee in which he made a diagnosis of rupture of the crucial ligaments and advised and performed an operation. Four sutures of No. 3 thirty-day cat-gut were inserted into the ends of each crucial ligament and the ends were left long. The knee joint was then closed by straightening the leg and the sutures tied. A few strands of silk-worm gut were used to drain the subcutaneous space and the leg was put in a Thomas knee splint. The knee was kept in a splint for three months and this was followed by massage and movement. The patient recovered with almost complete movement of the knee joint. Mr. Jones, however, has practically given up the operation because he believes he can obtain better results by putting the knee in a splint for from three to six months at perfect rest than he can get from operating. He says that fracture of the crucial ligaments, if left untreated, will for all practical purposes result in a useless limb. Corner of London has taken a reef in relaxed crucial ligaments, thereby shortening them, and he has even performed the ingenius operation of making artificial crucial ligaments by the use of wire sutures.

PREPARATION OF THE PATIENT FOR OPERATIONS UPON THE KNEE JOINT.

Some surgeon has stated that there is more danger in opening one knee joint than in opening a dozen abdomens. Whether this be true or not, it is a fact that the surgeon who would invade the cavity of the knee joint must conquer in every single detail the problem of asepsis. He must be doubly careful in preparing the parts for operation. The modern method of preparing the parts for operation are about as follows: The patient is sent to the hospital three or four days before the date of operation. The entire limb is carefully bathed and shaven and placed in a compress saturated with an antiseptic solution such as bi-chloride of mercury, biniodide of mercury, formalin, zinc chloride, in dilute solution, or some other antiseptic. Ether and alcohol and benzine are used before the operation and the tissues around the knee joint are covered with gauze saturated with an antiseptic and the incision into the joint is made through the antiseptic cloth, and the edges of this cloth are attached to the edges of the wound. W. C. Dugan and other surgeons have observed that it is very difficult to thoroughly clean the skin around the knee joint inasmuch as there are so many wrinkles that it is difficult to apply the antiseptic properly to the parts. He advises that the knee be flexed during the cleaning. When the skin has been incised, the surgeon must lay aside his knife because it has presumably been infected. He must proceed with the operation with a clean scalpel. Having entered the joint, the most scrupulous aseptic technic must be maintained. Many surgeons say that even the gloved finger should not enter the joint and that no instrument or sponge or other substance that has been touched even by the gloved hand should enter the joint. Inasmuch as the joint is so susceptible to traumatism, the most delicate manipulations must be made during this operation. Any pulling or laceration of the synovial membrane may result disastrously to the joint, and it is most unfortunate if the condition found will require anything but the most gentle handling. When the joint is closed, the synovial membrane should be everted so as to prevent adhesions and the sutures should be inserted from the inside of the joint outward. According to the modern understanding of the slow-drainage which characterizes the knee joint, I believe that drainage should be put in and left in at least for a few hours whenever the knee joint is opened, whether the operation is an aseptic or a septic procedure.

DIFFERENT METHODS OF OPENING THE KNEE JOINT.

The knee joint may be opened by an incision on its external side, on its internal side, on its anterior side and on its posterior side. Inasmuch as the majority of injuries to the knee joint are on the internal side, a linear incision just inside of the patella is a very good incision in the majority of instances. Through an internal lateral incision, the joint may be quite freely exposed, and even if the diseased condition is on the outside of the joint, it may be reached from an internal incision. If the parts can be oriented by an X-ray examination so that it can be determined whether, for instance, a foreign body lies in the inside, outside, anterior part or posterior part of the joint, the incision can be made accordingly. Corner describes an incision which was first practised by Robert Jones in which an incision is made in the median line splitting the ligamentum patella, splitting the patella in two or sawing it, cutting through the synovial membrane and opening the knee joint in that way. He has made the observation that the ligmentum mu-

cosum acts as a diaphragm and divides the joint into an anterior and posterior portion. The practical point claimed from this observation is that it is impossible to thoroughly drain the joint unless this diaphragm be destroyed. He further states that it is impossible to thoroughly irrigate the joint inasmuch as the communication between these two cavities closes up. He further states that one may not be able to remove all the foreign bodies in a joint if this partition is not destroyed. The joint may be opened by an incision in the popliteal space. The popliteal vessels and nerve must be guarded carefully and retracted to one side. The popliteal artery lies on the posterior ligament of the knee joint and when foreign bodies are situated in the posterior part of the joint, this incision has many advantages and one can enter the joint in the popliteal space without producing any injury to important structures.

Murphy has devised an operation known as arthroplasty for the restoration of the functions of an ankylose knee joint. His operation consists in making a longitudinal incision on both the external and internal sides of the knee and by separating the femur and the tibia with a chisel, laying aside the patella, and using a flap of the anterior and lateral ligaments of the joint, which he interposes between the ends of the bone covering them entirely with soft tissue. He claims to have had a considerable degree of success in this operation. Ordinarily he rotates the patella at an angle of 108 degrees and puts the aponeurotic side of the patella next to the joint to prevent ankylosis. He reports a case of knee arthroplasty in which he performed a complete rotation of the patella. The patella aponeurosis will not unite with the femur. Converting a functionating joint into an ankylosed joint is the operation known as arthrodesis. Waugh of London reports operating on a child with flailed limbs as the result of infantile paralysis in which he did an arthrodesis on each knee joint with beneficial results.

The researches of Carrel, Jaboley, Guthrie and Lexer in the transplantation of joints has been epoch making. In 1908, Lexer reported three cases of knee joint transplantation, two in which good results were obtained, union taking place followed by fairly good function. Vaughan of Washington reports a case of suppurating tubercular disease of the knee in which he transplanted the entire knee joint excepting the patella, the donor of the joint being a patient who had died a few hours before this operation was performed. The donor's knee joint was removed after death and placed in normal salt solution. The patient's diseased knee was removed, the condyles of the femur and head of the tibia were sawed off, two and a half inches in all were removed. The donor's joint with all the ligaments and periosteum in place were placed *in situ* and fastened with four wires. The patella was placed in its bed and the ligamentum patella was united. Suppuration and bone necrosis occurred and the patient died about six months after the operation. The transplantation of joints will undoubtedy be one of the successful operations of the future. G. Marion, a French surgeon, has devised an operation for excision of the joint without even entering the joint cavity.

The following case of foreign body in the knee joint has been under my observation recently:

CASE REPORT.

F. W., merchant, age 54, while playing leap frog in a neighboring city thirty-two years ago (when aged 22) fell and struck on his right heel, producing a severe injury to the right knee. He fell to the ground and had to be carried to the railroad train on a stretcher. He doesn't remember much about the treatment that was employed at that time excepting that he did not have any operation and was confined to a wheeled chair for over four months after the injury. Ever since the injury, he has had trouble with this joint. It has locked several times, and following this effusions have formed.

After a period of rest, the effusions would disappear, and he would resume work and not become disabled again for a year or two. For many years he could feel a moving body in the joint, and fourteen years after the original injury, a large floating cartilage was removed from the joint. He was laid up for six weeks after this operation. The joint, however, continued to give him trouble, it continued to lock at intervals, effusions would form, and walking became painful. It has been giving him considerable trouble during the last year, and in May, 1915, he consulted me concerning it. Comparing the knee with its fellow, it was noted that it was crooked and that the tibia was inverted, that the joint was somewhat swollen and tender over the internal semilunar cartilage and opposite the anterior edge of the tibia. There was apparently no effusion in the joint. An X-ray examination showed a foreign body, a bony growth in the joint, and as near as we could orient it, it was situated below the patella on the inside of the joint. Operation was advised and performed May 19. The patient was given ether and the joint was opened on the inside by a lineal incision two and one-half inches long. The joint was opened and flexed and at the outside of the joint a large osteoma was found attached by a strong short pedicle to the synovial membrane. On account of its size and firm attachment, it was removed with considerable difficulty. The joint was carefully closed and a small rubber drain was inserted at the lower end of the wound and left in place for forty-eight hours.

Voluminous dressings were applied and a posterior plaster splint was put on for twenty-four hours, after which only the dressings were applied. An experienced masseur was directed to give passive movements to the muscles above and below the knee for the first few days. On the fourteenth day, active motion was commenced, and after a number of weeks, the patients was able to walk to his place of business.

It has occurred to me that this bony growth may have been an epiphyseal separation, which dated from the original injury, inasmuch as the epiphysis of the upper end of the tibia does not unite with the shaft until about the twenty-fifth year. It may have been a fracture of the semilunar cartilage of the accretion type which may have commenced as a very small fragment which became nourished from the joint secretion until it attained the growth which you now see in this specimen. This foreign body was productive of so much trouble that the patient came to operation stating that he would rather have a stiff knee than to suffer as he has been doing for many years. At the present time, the patient has perfect extension and rotation but there is considerable limitation of flexion which, however, is steadily improving.

Interesting cases of foreign body in the knee joint, of probable traumatic origin, have been reported by Sherrill and by Broca.

CASE REPORTS.

Sherrill of Louisville, in *Surgery, Gynecology and Obstetrics*, reported a case of a man with a history of a blow on the knee thirty-three years ago from the kick of a horse. The patient thought that it caused a separation of a fragment of bone from the head of the tibia. Three years ago, or thirty years after the injury, the joint began to trouble him and he could feel a large floating body for a long time in the joint. The joint was swollen and locomotion was impaired. Two movable bodies could be felt above the patella. These two bodies were removed, one was concave on one surface and convex on the other and was about two inches wide. It was unevenly rounded and was pitted on its under surface. The prominences were smooth and covered with cartilage. The smaller one was the size of a hazelnut. Thick synovial fluid escaped when the sac was opened.

Broca reports the case of a patient 14 years of age who suffered from a fall which was followed by pain and effusion in the right knee. There was a marked atrophy of the quadriceps extensor muscle. The knee was opened and a formed body was found about the size of a quarter. This body was glistening in appearance on one surface and covered with cartilage. On the other surface, it was nodular and felt like rough areas of chalk. On the lower part of the external condyle of the femur was a surface corresponding with the roughened surface of the foreign body. A microscopical examination of the foreign body showed normal cartilage and epiphyseal tissue. This case, according to Broca, was an extremely rare one.

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THE TRAUMATIC TRANSPLANTATION OF CILIA INTO THE ANTERIOR CHAMBER.*

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In perforating injuries of the eyeball, eyelashes may be cut or torn from the lid margin by the perforating object and carried with it into the eye. Also in operations where the eyeball is opened, cilia may be cut by the instrument in the hand of the operator and introduced into the anterior chamber. While the transplantation of cilia is not infrequent in injuries, it is an exceedingly rare occurrence during operations. When operating, nevertheless, we should bear in mind the possibility of this accident happening, for a number of authentic cases are on record.

Cilia are transplanted into the anterior chamber of the eye most often in those types of perforating injuries where the penetrating instrument does not remain in the eye. Occasionally a fragment of steel or copper may carry with it cilia into the vitreous or the metallic fragment may enter the vitreous while the cilia is left behind in the anterior chamber. The cilia may be free and movable in the anterior chamber; more often it is fixed either through contact with iris, pupil or angle of chamber, or through being embedded in exudate, blood, or opaque lens matter. Often one end of the cilia remains fixed in the corneal wound.

The presence of cilia in the anterior chamber may be quite easily overlooked. Focal illumination and a monocular or binocular loupe are of assistance in their detection.

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Inasmuch as cilia, because of their position and function, catch innumerable dust particles and dirt, it might be supposed that when carried into the anterior chamber, they would frequently be a source of infection and set up severe purulent or plastic inflammation. The contrary, however, appears to be true, cilia in the anterior chamber being borne by the eye generally for considerable periods without marked reaction or serious results. In explanation of this phenomenon attention may be called to the fact that the rapid filtration of aqueous from the anterior chamber allows little opportunity there for bacterial growth. Moreover, cultural attempts by Müller showed, rather surprisingly, that cilia are not very often harbourers of pathogenic micro-organisms. Even when infection does occur in perforating wounds where cilia have been implanted, the infection may have been brought about by the perforating object rather than by the cilia.

If the cilia is a carrier of pathogenic micro-organisms it can undoubtedly set up purulent or plastic inflammation. Two cases reported by Hirschberg point with certainty to cilia as a source of such infections, for in both instances a circumscribed purulent inflammation cleared up after the removal of the implanted cilia.

While cilia, as stated, may remain in the eye for many years without giving rise to any disturbing symptoms, in many cases they have caused sooner or later complications, such as recurrent irritation, mild plastic inflammation, and epithelial tumors or cysts. Mechanically a cilia may give rise to irritation especially where the point of the cilia is in contact with iris or cornea. Partial expulsion of cilia from the anterior chamber has been reported. This appears to be largely due to the long continued irritant action of the cilia at the point of contact with the cornea. Iris hyperemia and mild plastic inflammation may occur at repeated intervals from the scratching and pricking to which the iris is subjected during normal movements of contraction and dilatation. Exudate may be thrown around the eyelash at such times. When plastic inflammation occurs in perforating wounds, where in addition to the presence of implanted cilia there is traumatic cataract, anterior synechia or wounds of the iris, the cilia may be only one of the responsible factors in the inflammation.

An interesting complication of cilia in the anterior chamber is the occurrence of epithelial cysts or tumors. It is well known that living

epithelium transplanted experimentally by operation or by trauma into the anterior chamber, may continue to grow and form there so-called epithelial pearl tumors or cysts. Rothmund (1871) collected from literature, thirty-six cases of these tumors, in twenty-eight of which there was a perforating wound and in three of these, there were eye-lashes in the anterior chamber. Since this time a considerable number of pearl tumors due to eye-lashes in the anterior chamber have been reported. The epithelium of the root sheath of the cilia proliferates forming a tumor mass which may readily undergo cystic degeneration with formation of fat and cholesterin globules. At first, usually in contact with the iris, these tumors may enlarge so as to encroach on other walls of the anterior chamber. Clinically, their growth may lead to visual disturbances, inflammation or increased tension.

Cilia which have remained for a considerable period in the anterior chamber undergo, as a rule, some change in appearance. They are bleached out by aqueous humor; the hair may be split or the cuticle separate. Wagenmann, in his resumé, states that through giant cell formation cilia eventually may be absorbed.

Perforating injuries of the eye with cilia in the anterior chamber complicated by purulent or plastic inflammation, call for the removal of the cilia at the earliest possible moment. Even though one is uncertain regarding the source of the infection, the cilia should be removed. In cases where the inflammation is plastic and circumscribed about the cilia, the removal of the latter offers a fair chance of checking the inflammation. Even cilia which are retained in the anterior chamber without causing irritation or producing other ill effects, should be removed unless circumstances are such that the patient can be kept under observation. In such cases the operator has considerable leeway as regards the time of operation and can often make his attempt at removal at a time when other operative procedures, such as removal of cataractous material, are undertaken. Occasionally the cilia may be removed shortly after the injury through the corneal wound, especially if the eye-lash is in contact with the wound.

It is by no means an easy matter to remove a foreign body from the anterior chamber on account of the rapid outflow of aqueous and the tendency of the iris to prolapse through the wound. Fortunately the aqueous, when escaping, often carries with it the implanted eye-lash. Before incising the cornea, eserine should be instilled, this procedure helping somewhat in preventing iris prolapse. The incision should be made at a point offering the best opportunity for seizing the cilia—a small forceps with serrated blades is perhaps most useful. Anterior or posterior synnechiae or other complications may determine the point of incision. Where cilia lie upon the iris or are entangled in it, it may be necessary to remove a portion of the iris with the cilia. Unless necessary, however, a coloboma should not be made on account of the resulting visual disturbance.

I desire briefly to report three instances of this condition.

CASE REPORT.

Case 1. L. D., age 19, was holding an axe to cut off an extruded brass rod, when particles of metal lodged in his face, hand and right eye. I saw him the day after the accident. There was a small perforating wound of the cornea, located paracentrally, down and out. From the inner lips of the wound, a single full-length cilia extended horizontally in the anterior chamber with the point free. There was a punched-out hole in the iris, 3 millimeters below the pupil. The lens appeared uninjured. Back of the lens and below, there was an exudate in the vitreous. No foreign body was seen. Vision was reduced to counting fingers at three meters.

The X-ray showed a shadow just back of the lens about 5 millimeters below the horizontal plane.

One of the pieces of metal which had entered the hand was easily removed and was found to be brass. Externally the reaction of the eye was at no time severe. The exudate in the vitreous remained localized. About five weeks after the injury the corneal wound containing the base of the cilia suddenly showed evidences of local irritation; a narrow zone of the cornea adjacent to the wound became infiltrated and there was a slight bleb-like swelling of the epithelium over the wound with localized ciliary injection. The patient experienced a feeling of a foreign body. This condition persisted for a week when the wound and cilia resumed their original quiescent state. Three months after the injury, the eye was pale, part of the exudate in the vitreous had been absorbed and vision was one-tenth. Removal of the cilia was advised but the patient has not yet consented, and has not been seen since last May.

Case 2. W. S., age 32, a Polish laborer, was disentangling coiled brass scrap when the end of one of the coils struck him in the left eye. I saw him the day of the accident, Nov. 15th, 1915. There was a lacerated wound of the cornea on the nasal side about 4 millimeters long. The iris was adherent to the posterior lips of the wound. The chamber had partially reformed and contained four eye-lashes, two matted together in the upper half, the point of one touching the iris, while the other two were free in the lower half of the chamber. The cilia were 5 or 6 millimeters in length. The lens capsule was torn and there was beginning opacification of the lens fibers. Examination of the lid

margin failed to reveal the origin of the transplanted cilia. An X-ray examination was negative.

The opacification of the lens gradually increased and the cataractous lens matter began to bulge through the rent in the capsule. The injection of the ciliary vessels increased and the eye became painful. The blood vessels of the iris were enlarged and were especially prominent where the point of one of the cilia touched the iris. Exudate was thrown partially about this eye-lash.

Ten days after the accident on account of pain and marked reaction, I made a keratome incision in the cornea above and removed as much of the lens matter as possible. Two of the cilia were washed out with the cataractous lens matter. One was removed with an iris forceps without much difficulty, while the fourth could not be located at the time of operation but was found a few days later to be still in the anterior chamber.

From this time there was gradual absorption of the remaining lens matter. This was accompanied by exudation about the torn capsule and adherent iris with subsequent vascularization and organization. On January 18th I attempted to remove the single remaining cilia by keratome incision of the cornea. I was not successful in securely grasping the cilia with forceps but fortunately it was finally washed out by the escaping aqueous.

On March 14th, on account of the corneal scar and organized exudate in the anterior chamber about the adherent iris which partially blocked the pupil, I made a small iridectomy downward and outward. Healing occurred promptly.

The patient denied light perception although the pupil reacted to light. The fundus was clearly seen and appeared normal. The exact visional function was not obtained.

Case 3. M. I., a furnace tender, 29 years of age quit work on April 10, 1916 on account of an inflammation of the left eye. He stated that on April 8th, while chipping out fire brick, something struck him in this eye.

I saw him first on April 10th. There was marked injection of conjunctival and deeper vessels of the left eye. The cornea was steamy; the anterior chamber shallow. The eyeball was tender on pressure and its tension increased to about plus 2. I could detect no break in the continuity of conjunctiva, cornea or sclera, indicative of recent trauma. There was evidence of an old lesion, however, in the presence of a white glistening corneal scar and a small irregular pupil containing a thin connective tissue membrane. Vision—light perception, projection faulty.

The patient admitted that he had a severe injury of this eye when a boy of 9 years, caused by a stick of wood striking him in the eye.

Through the cornea on the temporal side, in no connection with the scar of the cornea, could be seen a partially bleached-out eye-lash about 5 millimeters long. It appeared as if partial expulsion of this eye-lash from the anterior chamber had taken place. The point of the eye-lash was located just under the conjunctiva at the corneo-scleral margin. About one and one-half millimeters back from the point, the eye-lash came into direct contact with the superficial epithelium of the cornea, causing a bleb-like prominence of the epithelium. From this point of surface contact, the cilia was bent sharply backward and the rest of it appeared to lie in the posterior layers of the cornea or possibly on its posterior surface. The cilia was obscured partially by exudate.

An X-ray examination of the right orbit showed no shadows indicative of a metallic foreign body. To diminish the tension of the eye, I incised the cornea August 11th. My incision was made parallel and close to the implanted cilia. With the blade of a mouse-tooth forceps, I endeavored to loosen the cilia from the posterior surface of the cornea and drag it out through the wound. The cilia appeared, however, to be too closely in contact with the cornea to be displaced and my attempt was unsuccessful. A small prolapse of the iris which occurred was excised. Two weeks later, tension of the eye was minus, vision nil, and as the eye was painful, enucleation was advised. This was refused. The redness and irritability of the eye gradually decreased and the patient resumed his occupation May 1st.

THE CAMPAIGN AGAINST TUBERCULOSIS.*

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The scope of the present Michigan tuberculosis survey campaign is clearly outlined in Act 238 of the Public Acts of 1915. Section one of this act reads as follows:

"There is hereby appropriated from the general fund of the state the sum of $50,000 for the fiscal year ending June 30, 1916, and the further sum of $50,000 for the fiscal year ending June 30, 1917, for the purpose of making a tuberculosis survey of the state, the employment of medical men and nurses and other experts to make said survey, the organization of anti-tuberculosis societies throughout the state and the prosecution of a campaign to lessen the ravages of said disease."

The first clause of section two reads:

"The state board of health shall have charge of the work outlined, in section one here-of and of the expenditure of said sums of money."

The wording of this act is quite clear and does not leave much doubt as to what shall be done and how the money shall be expended. The legislature clearly did not intend that the money should be spent for sanatoria; nor for treating isolated cases of tuberculosis here and there; nor through an equal distribution of the funds among the 83 counties of the state; nor for the study of a technical research problem.

Rather it intended that the state board of health, through its own organization, should conduct a vigorous state-wide campaign against

*Read before Section on General Medicine, M.S.M.S., Fifty-First Annual Meeting, Houghton, Aug. 15-16, 1916.

tuberculosis; to make a survey of the entire state; to find as many cases of tuberculosis as is possible and to make an effort to help them; and finally to organize the state through anti-tuberculosis societies.

The plan which the board of health has outlined is strictly in compliance with the provision of this act. They have built up an organization, commensurate with the amount of money available. This organization consists of a director; several examining physicians; (one of whom is permanently employed. The others are employed for part time service) one physician who is engaged in lecturing and in organizing; twelve nurses who help in the clinics and who visit the homes of the tuberculous; one housing expert who is making an effort to study housing conditions as it relates to sanitation; and one publicity agent who tries to educate the people through the columns of the newspaper.

We adopt the county as a working unit. We plan a three weeks' campaign in each of the larger counties and two weeks in the smaller ones. The work is first advertised through the columns of the newspaper. One or two advance nurses call on all the physicians. They also call in the homes of the known tuberculous or suspected ones to invite them to come to a public clinic for free examination. The clinic is opened a week after the preliminary visit at some convenient place and chest examinations are made. Local physicians are invited to join us, to help make the examinations and to see the work. From 50 to 100 per cent. of them respond varying in different communities. The week following the examinations the nurses visit the homes of all the positive tuberculous and also the suspicious cases found and an effort is made to instruct them and to give them some helpful advice.

During the progress of the campaign health talks are given to school children and wherever opportunity affords. An effort is made to organize anti-tuberculosis societies, where no such organizations are found. An effort is made to induce common councils and boards of health to establish full-time health departments and to employ visiting nurses, and to induce boards of supervisors to build county sanatoria, etc. An effort is made to interest the whole community in the question of protecting its health. We try to impress them with the need of spending more money for public health purposes.

Since the beginning of the campaign in October of 1915, we have visited twenty-six counties. We have examined better than 9,000 people who have reported at the clinics. We have turned away hundreds for whom we could not find time during our short stay. We have reported more than 2,000 cases of tuberculosis, and have filed the names of more than 1,700 cases who have suspicious evidence of having tuberculosis. Through our nurses we have visited the homes of more than 3,700 people. We have written thousands of educational articles for newspapers mostly in the form of news items, and hundreds of editorials. We have given hundreds of health talks in schools and lectures on public health.

The campaign is of necessity largely educational. The state has no facilities at the present time with which to treat its tuberculous people. We must be satisfied with the effort to educate them in the home. We must find as many of them as we can and then make an effort to instruct them in right living habits. Under present conditions tuberculosis must be treated in the home and we can do so by educating the people how to live.

The survey should also leave a definite impression upon every community and upon the state as a whole of the extent and prevalence of tuberculosis and of the need of doing some constructive work in order to handle this problem scientifically and effectively in the future.

We are not trying to leave the impression that by one visit in a community the state board of health will strike a death blow at tuberculosis. Rather we want to leave the impression of the seriousness of the problem and of the need that the whole community takes a serious interest in its health and of the need to take definite steps to combat tuberculosis and all communicable diseases through definite and efficient health organization.

If you will analyze the situation thoughtfully I think you will grasp the purpose and scope of the campaign. We have thousands of people in Michigan afflicted with clinical tuberculosis, and we are totally unprepared to handle the problem as it should be. It is the most prevalent disease everywhere and neither public nor physicians in general recognize the fact. That is the situation.

It is nothing uncommon to hear the expression among physicians that they have very little tuberculosis in their practice or community. And yet I am convinced that physicians in general practice meet more tuberculosis than anything else. There are from 2,500 to 2,600 deaths reported in Michigan

every year, and the tuberculosis death rate is higher than from any other disease. It is estimated by competent authorities that there are from five to ten cases of tuberculosis in existence for every death reported. If that is true then it is not unreasonable to believe that physicians meet it more commonly than any other disease. But it goes unrecognized.

The burden of our task is to make a clear cut analysis of the whole situation and show the facts as they really are and then to make a strong effort to induce our state and local governments to give us the proper laws and ordinances and funds with which to work in the future. If we leave the correct impression of the situation our work will not have been in vain.

The survey is going to benefit directly many hundreds of the tuberculous people with whom we come in contact. But greater good will accrue indirectly from the results of the work that the campaign will set in motion, both among the physicians and the public.

The medical profession is the vital instrument through which tuberculosis and all other diseases will be whipped. It will never be done without them. It is as ridiculous to attempt to rid our state from tubercnlosis without the aid of the physicians as it would be to attempt to build a permanent bridge across a large river without the aid of the engineering profession. The results would be about the same. If the physicians of the state are not enthused about the effort to rid ourselves of tuberculosis it is our business to make the effort to do so. We cannot succeed without them.

Our campaign is conducted entirely through and by the aid of the local profession wherever we work. We make the effort to reach every physician and we try to arouse his interest in the cause. If the medical profession of Michigan would stand up squarely and join hands in this cause to organize our state, we could be the first state to boast of "No uncared for tuberculosis." Why not lend a helping hand in this serious effort, rather than stand back and criticise?

The problem of eradicating tuberculosis will eventually be solved, like every other health problem, by placing it in control of efficient and competent health organizations. Tuberculosis is just one of the many communicable diseases. Its eradication depends upon the same principles of sanitation that govern all the others. While the application of the methods may vary somewhat with each disease, the principles are uniform, and wherever these principles are applied in a practical way they cannot help do for tuberculosis as well as any and all other preventable diseases.

A competent and a trained organization is the first requisite in the business world. We would never attempt to manufacture and sell a commercial product without first the assurance of the right organization and heads in charge. Tuberculosis is our biggest and most difficult health problem. A competent and trained head and organization in charge of the biggest health problem of every community is the first requisite for success.

I deserve not to be misunderstood. I do not want to leave the impression that we should discourage all local tuberculosis work where it is conducted by charitable or private organizations. We should encourage these all we can. They all help to make the larger constructive work a possibility. But we can never hope to rid the State of Michigan of tuberculosis through charitable and private organizations. The work has been in the hands of charity long enough. It should be financed and conducted by local and state government and put on a firm business basis. Prevention of disease should be a business undertaking and not a charitable side-issue.

The greatest need above everything else in Michigan is health organization. We need revision of our state laws which will divide the state into health districts, each district to be supervised by a competent and full-time health official. As a first step that will do more towards continuing the work of the present survey and towards eventually ridding Michigan from tuberculosis than any other movement.

Given a competent health organization in a community it does not take long before we see a laboratory, a tuberculosis clinic, a sanatorium, open air schools, visiting nurses, etc. as well as the other necessary equipment for health work.

We need more state, county or city sanatoria where the tuberculous people can be treated and isolated. But it is important to be assured of competent supervision especially in our county and city institutions or they will degenerate into inefficient plants.

THE DIAGNOSTIC IMPORTANCE OF THE PANCREAS.*

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In making an examination of the abdominal organs for the purpose of establishing a diagnosis in intestinal disorders, such as a suspected duodenal ulcer, some gall bladder disease as cholecystitis or cholelithiasis, the pancreas does not seem to be taken into consideration with sufficient seriousness and frequency. It is not only the immediate involvement of the gland that demands attention, but to a far greater extent the influence of the pathological conditions on that organ in the future which is likely to cause the patient serious trouble and discomfort.

If it is considered that the prognosis of acute pancreatitis, due to cholelithiasis with cholecystitis is nearly always hopeless without timely surgical help because of the rapid progress and virulence of the infection, it will be conceded that any additional factor that may be able to throw light on the possible involvement of the pancreas is a matter of vital importance.

According to the Mayo's, the pancreas is involved in 7.6 per cent. of all cases of gall bladder and biliary tract disease, and in 325 operations upon the common and hepatic ducts the pancreas was inflamed in 22 per cent. of the cases. They also found that in 81 per cent. of lesions of the pancreas, these were either due to, or associated with, biliary calculi. Pancreatitis is four times as frequent when the calculi are in the ducts as in the gall bladder.[1] And yet, as long as a patient suffers only occasional attacks or inconvenience from some gall bladder disease or gallstones, the condition is often allowed to go on unheeded and unremedied, until a few years later sugar is found in the urine and pancreatitis has set up which can be distinctly traced to the previous existence of cholelithiasis or cholecystitis, degeneration of the pancreatic tissue having sufficiently destroyed the islands of Langerhans to change the carbohydrate metabolism.

A patient presenting definite evidence of cholecystitis of cholelithiasis should not only be carefully watched, but positively urged to have his gall bladder drained for the purpose of avoiding the possibility of pancreatitis at a later period. Many practitioners who do not make a specialty of these affections, when scrutinizing their diabetic cases, are struck by the fact that so many of them presented symptoms pointing to gall bladder disease as an etiologic factor, and in this era of prophylaxis it behooves us to foresee the possible later complications and prevent them instead of dogmatizing on the sequence of events after they have taken place.

In the study of the disease of the pancreas, it is very important to bear in mind certain facts with reference to the anatomy of this organ which will bear on the points I wish to bring out in this paper.

It is essential to remember that the pancreas is retroabdominal and located at the level of the first and second lumbar vertebrae, extending transversely between the spleen and duodenum, and that it has two ducts by which the pancreatic juice is carried into the intestine. The duct of Wirsung enters with the hepatic duct into the ampulla of Vater; the duct of Santorini enters a little above this but is not always patent. Furthermore, histologic anatomy shows that there are two types of cells producing two distinct secretions: (1) the pancreatic ferments which play a role in the intestinal digestion and (2) the internal pancreatic secretion which has a specific influence on carbohydrate metabolism.

The most widespread attention was aroused by the discovery of von Mering and Minkowski, in 1890[2], that the removal of the pancreas in dogs produces diabetes, and ever since this epochal discovery evidence has steadily accumulated to the effect that disease of the islands of Langerhans is one of the essential etiologic factors in diabetes. Moreover, the recent thorough-going investigations into the metabolism in diabetes bid fair to prove absolutely that the persistent occurrence of even small quantities of sugar in the urine means disease of the islands of Langerhans and thereby of the pancreas. We are justified in considering even evanescent glycosuria of importance, because the majority of these cases develop at later stages the graver forms of diabetes. This simply means that pancreatitis was already in the process of developing when sugar first appeared and continued to involve the islands of Langerhans to an increasing extent as time went on.

The relation between diabetes and pancreatic disease having once been established, the interest in the association became so keen that the fact of pancreatic disease frequently existing

*Read before the Section on General Medicine, M.S.M.S., Fifty-First Annual Meeting, Houghton, August, 1916.

1. Kelly, N. Y. Med. Journ., 1910, p. 334.

2. Von Mering and Minkowski: Arch. f. exper. Path. u. Pharmakol., 1890, Vol. XXVI. p. 371).

without any disturbance in the carbohydrate metabolism was overlooked; and it is to the diagnosis of these conditions that I wish to call your attention.

Acute pancreatitis, which is usually hemorrhagic, is rarely diagnosed. As a matter of fact, when such cases come to operation, this is frequently of an exploratory nature and performed with the idea of finding an intestinal obstruction or some other grave condition in the peritoneal cavity.

In all cases where acute pancreatitis is suspected, it is very important to obtain a careful history, because an injury that may seem to be of a minor nature and apparently unconnected with the fully developed pathological condition, may be the etiological factor in the pancreatic hemorrhage and may also be one of the determining factors, on the strength of which the disease is located in the pancreas.

In one of our cases, a 20-year old man (J. A.) received a kick in the epigastrium in a football game, followed by minor symptoms of shock which disappeared in a short time, and the incident was forgotten. When the patient, many weeks later, applied for treatment, there was intense pain accompanied by nausea and vomiting. The urine showed no evidence of sugar, acetone or diacetic acid. The blood was normal. The gastric juice had a low hydrochloric acid content, but contained neither blood nor mucus.

There were no surgical signs in the abdomen, excepting slight resistance and rather diffuse tenderness without any rise of temperature. There was also pain in the back, especially at the level of the lower dorsal vertebrae. At times, the distress was excruciating, the patient assuming most extraordinary positions in an effort to release the tension of the abdominal muscles. During an unusually severe attack, the patient became unconscious. There were evidences of shock with very rapid pulse and profuse perspiration. Extreme pain in the back and abdomen followed after return to consciousness and death ensued three hours later.

The autopsy showed that there had been successive hemorrhages which had led to destruction of pancreatic tissue and in turn to more profuse hemorrhages. The following were the conditions found:

On lifting the congested omentum through the first peritoneal incision, a mass of blood was seen in mesentery. The transverse colon was contracted. The appendix was normal and free from adhesions, the hemorrhage going down the back of the cecum to the root of the appendix. The normal ascending colon showed the hemorrhage behind and extending on either side. The liver was normal. A small remnant of bile in the gall bladder partly disappeared under pressure. Palpation revealed nothing abnormal in the bile ducts. The gall bladder was normal in appearance. No induration or other evidence of ulcers or neoplasms in the stomach or duodenum. The hemorrhagic infiltration could be separated into two distinct areas: one just below the level of the pancreas and in front of the vertebral column, with a capacity of about six ounces, and the other—likewise peritoneal—from the lower end of the head of the pancreas extending downward and upward along the right side of the vertebral column, with more than twice the capacity. In the first cavity, the mesentery and retroperitoneal tissue were lifted forward by the hemorrhage. The mass was clotted blood and showed a large amount of fibrin in sheets, and there was evidence of beginning organization.

A careful dissection into the head of the pancreas revealed hemorrhage which was not discernible from the anterior aspect of the pancreas. The hemorrhage had apparently burrowed and made an irregular cavity about one and a quarter inch long, extending parallel to the wall of the duodenum and about a quarter of an inch from it.

In dissecting downward, this burrow was found to lead to the surface of the pancreas posteriorly near the lower end of the head.

Study of the gross specimen led to the conclusion that this hemorrhage was in an artificially produced cavity and not within the lumen of the ducts.

No evidence could be found that any blood had ever passed through or into the duodenal wall.

Careful microscopic study of various sections of the head of the pancreas showed parenchymatous degeneration in the area involved in the hemorrhage and the contiguous zone. The hemorrhage in the pancreas is not within the ducts.

A complete study of this case confirms the original diagnosis of hemorrhagic pancreatitis.

The diagnosis of hemorrhage of the pancreas from the symptom of pain is very important. The location of the pain in the abdomen is closely confined to the level of the umbilicus and the pain itself is in the nature of a solar plexus blow, causing not only local but also

a peculiar general distress affecting the entire body.

The pain in the back is still more characteristic, as it is apt to be localized at the level of the lower dorsal and first lumbar vertebrae. It was described by the patient as if something were being pulled out of the back. The pain in this area is no doubt due to the reflex of the stretching of the mesenteric tissues and the solar plexus.

The whole condition had been preceded by what was apparently considered a slight injury, the etiologic character of which had practically passed unnoticed, and the physical symptoms and signs were of such a nature as to lead two or three surgeons to consider the case hysterical rather than surgical.

A rather important symptom to bear in mind is the condition of shock that accompanied the hemorrhage. The pulse was thready, the patient perspired freely and had a sense of extreme weakness, resulting in unconsciousness from hemorrhage and pain in the solar plexus region.

This case also shows the importance of taking a very careful history of just what the patient did or what happened to him preceding the occurrence of these attacks, as these events are apt to be ignored or overlooked on account of their very triviality. A sudden jolt or blow over the abdomen may precipitate a hemorrhage. Sometimes the first hemorrhage may be small and most symptoms may disappear, while the history of the injury may be entirely disregarded by the patient. The first hemorrhage, though small, causes parenchymatous degeneration of the pancreatic tissue, and this in turn leads to subsequent hemorrhages.

I have been unable to find any mention of this symptom of pain in the back with its subsequent manifestations, as described above, on the part of any previous author writing on the diagnosis of acute hemorrhagic pancreatitis, although in view of the rapid fatal ending in the present case the seriousness of the situation is apparent.

Since then I have also observed the same symptom of pain in the back in several cases of malignant disease, where there was every reason to believe that the pancreas was the primary focus. One of my patients (M.E.M.), a rugged man of 54 years of age, of irregular habits, complained of pain in the back and digestive disturbances. Jaundice had set in recently.

Aside from the pain in the back, there was also a general ill-feeling as if caused by a blow below the belt—as the patient expressed it. The urine contained bile; the other urinary findings were negative. The stool was tested for bile and trypsin with positive results, showing that the obstruction of the biliary and pancreatic ducts was incomplete. There was considerable cachexia which, together with the peculiar type of pain, especially in the back, led me to make a diagnosis of cancer in the pancreas, which was confirmed at operation. Two months later the patient died, having suffered intensely in the interval from pain in the back.

In cases of malignancy of the pancreas, the pain in the back does not always manifest itself as a most striking symptom, probably due to the fact that the encroachment on the tissues about the head of the pancreas does not cause the above described reflex phenomena through the solar plexus.

I have had cases of this kind where operation has shown that the pancreas was the primary focus of malignancy without the above described back symptoms.

In the case of acute hemorrhage, the epigastric pain was intense, due no doubt to the dissecting effect of pressure of the hemorrhage through the tissues.

In these cases no sugar was found in the urine, which can be accounted for by the fact that there were still enough interacinar cells left to furnish sufficient internal secretion for the maintenance of proper carbohydrate metabolism.

Cases of this kind are comparatively rare, because they only include those in which there is a decided encroachment on the pancreatic tissue or where the occurrence of hemorrhage causes a tearing or stretching of the tissues about the pancreas.

A much more common condition is that of chronic pancreatitis. A few observers have called attention to this condition in the past decade, emphasizing the importance of gall bladder disease as an etiologic factor. The physician has learned the lesson of cholelithiasis and cholecystitis well, but is apt to overlook the importance of the consequence that these affections may entail upon the pancreas at later periods in the patient's life.

In this class of cases it is important to consider the etiology of the inflammation, and Opie in his comprehensive work[3] lays stress upon the fact that not infrequently chronic pan-

3. Disease of the Pancreas, 1910.

creatitis is a secondary manifestation, following changes in the intestine, bile passages and liver, and that inflammatory irritants may reach the pancreas by way of the duct from the blood vessels and possibly through the lymphatics. Bacteria or toxic products, injurious substances taken as food and reaching the gland by way of the circulation, may cause a chronic inflammation of the pancreas. Arteriosclerosis, interfering with the blood supply to the pancreas, is also an etiologic factor in the degeneration of that organ. The extent and rapidity of the degeneration vary in intensity, and the acute hemorrhagic necrosis affects the various elements of the gland to such an extent as to produce sudden destruction, while, when the gland is attacked by less active irritants, the destruction is more gradual and the different elements of the gland may manifest a very effective resistance to the irritants. For instance, the islands of Langerhans may not succumb to the destructive agents with the same rapidity as other glandular cells, while in another case the conditions may be reversed.

In dealing with the etiologic factors of pancreatitis, Opie enumerates the following:

Obstruction of the pancreatic ducts.
Pancreatic calculi.
Biliary calculi.
Malignant growth.
Ascending affection from the duodenum.
Alterations of the blood vessels; arteriosclerosis.
Venous congestion.
Tuberculosis.
Syphilis.
Alcohol
Association of chronic pancreatitis with cirrhosis of the liver.
Association of chronic interlobular pancreatitis and persistent vomiting.

In view of the difficulties surrounding a diagnosis of pancreatitis, I submit that the symptom complex of pain in the abdomen and especially in the back together with the peculiar manifestations it entails will tend to clear up hitherto unsuspected cases. In this connection I may also mention the important investigations which Case is carrying on in the endeavor to make the resources of roentgenology available in the diagnosis of gastrointestinal troubles in general and pancreatitis in particular. Thus we read in his contribution to the *American Journal of Roentgenology* for June, 1916, entitled "Roentgen Observations of the Duodenum with Special Reference to Lesions Beyond the First Portion" the following important observation:

"The forcing of infected bile directly into the pancreatic duct is doubtless a common cause of acute pancreatitis. That this obstruction may result from other causes than the impaction of gallstones is probable. Oddi has shown that there exists about the ampulla a sphincter formed by a thin layer of involuntary muscle. Is it not possible that spasm of this sphincter may occur under certain circumstances?"

This suggestion is of great value in cases where the other etiologic factors fail of demonstration, and it is to be hoped that Case and other investigators will succeed in placing this diagnostic possibility beyond a doubt.

Of all the etiologic factors so far established, the most important are those that interfere with the free flow in the pancreatic ducts. If we bear in mind the anatomy of the pancreas and its relation to the bile ducts, it is easy to understand how abnormal conditions in this region can cause pancreatic disease. I think it very important to remember that, in a patient presenting symptoms of cholecystitis or cholelithiasis, the possibility of the pancreas becoming involved should have an important bearing on our advice to the patient. If the symptoms of cholecystitis persist, drainage of the gall bladder should be urged not only to relieve the conditions in the gall bladder itself but also to eliminate the possibility of chronic pancreatitis being developed in the future.

Every now and then cases are found with histories that are suspicious of gall bladder disease and occasionally show a trace of sugar in the urine. The latter contingency should be seriously considered with a view to deciding, if possible, whether this may be the forerunner of more severe diabetes due to progressive pancreatitis. Cases are also met with occasionally in which the drainage of the gall bladder immediately arrests or reduces the elimination of sugar, thanks, no doubt, to the effect of drainage on the pancreas by improving the secretions of that organ in regard to the better control of the carbohydrate metabolism.

This should be particularly borne in mind in individuals of middle age, as the institution of the indicated measures at this time may save the patients from a more malignant type of diabetes later in life. At a more advanced age, small quantities of sugar are often encountered in the urine which may, of course, be due to chronic pancreatitis. In a comparatively large percentage of cases, however, it will be due to arterial degeneration, the sclerosis interfering with proper blood supply and causing pan-

creatitis to a degree sufficient to disorganize the carbohydrate metabolism.

To make a diagnosis of pancreatitis is, therefore, a difficult matter and largely depends upon the care taken over the study of the patient's history and the actual findings in both physical examinations and laboratory study. It is very rare that the pancreas can be felt by abdominal palpation, except in malignant and cystic cases.

Various laboratory methods have been devised to determine the function of the pancreas, none of which have proved very satisfactory. Thus the Cammidge reaction which was highly esteemed when introduced in 1904 and improved in 1906 and again in 1908, has proved unreliable according to careful studies of various competent observers.[4] Opie[5] states that the reaction may occur without pancreatic disease, fail to occur in the presence of pancreatic lesions and will not serve to distinguish different forms of pancreatic disease.

Careful examination of the stools is perhaps of the greatest value, and the so-called fatty stool which is grayish in color and of oily consistency, when microscopically shown to contain free fat, points quite conclusively to impaired pancreatic function. Furthermore, the presence of protein in the stools, as evidenced by undigested meat fibres and particularly the persistence of nuclei in the muscle fibres is considered a fairly reliable test of pancreatic insufficiency. Adolf Schmidt devised a test based upon this principle. It consists in mixing with the food slightly fibrous beef cut into small cubes, hardened in alcohol and enclosed in silk gauze. As nuclear material is not digested in the stomach, the persistence of nuclei at defecation would indicate defective pancreatic digestion.

Of course, the presence of sugar in the urine should always arouse suspicion as to the presence of disease of the pancreas.

SUMMARY.

The pathological conditions of the intestinal organs should be considered more frequently in reference to the possibility of their causing pancreatitis at a later period.

The majority of cases of evanescent glycosuria develop graver cases of diabetes at later stages.

The fact that pancreatic disease frequently exists without disturbance in the carbohydrate metabolism is often overlooked.

In all suspected cases of acute pancreatitis, a careful history should be obtained, as injuries of a minor nature may constitute the etiologic factor.

The symptom of pain in the abdomen and especially in the back is very important and characteristic. The condition of shock accompanying the hemorrhage is an important symptom.

The first hemorrhage causes degeneration of the pancreatic tissue and this in turn leads to subsequent hemorrhages.

The symptom of pain in back also occurs in malignant disease of the pancreas.

These cases of pancreatic affection may occur without the presence of sugar in the urine.

4. Eichler: Berl. klin. Wochenschr., 1907, p. 769; Taylor: Lancet, 1906, p. 1818; Watson: British Medical Journ, 1908, p. 858.
5. Opie, Disease of the Pancreas, 1910, p. 101.

REPORT OF A CASE OF GANGRENE OF THE LEG FOLLOWING THROMBUS OCCLUSION OF THE POPLITEAL ARTERY—POST TRAUMATIC.

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History.—A male patient, forty-eight years of age, was injured in a runaway. There was a fracture of both tibia and fibula of the left leg. There were no immediate signs of any serious injury to the right leg; however, about an hour after the accident he began to have violent pain in the upper half of this leg which has persisted. It gradually extended downward and of late (five weeks after injury) has been located principally in the ankle. All along the pain in this leg was much more severe than in the broken one. A few days after the accident there was a slight discoloration such as occurs from the presence of free blood in the tissues, but there was no enlargement such as would result from the presence of a haematoma. He was soon unable to flex or extend the foot and this power was never regained. In the beginning the foot and leg were cold, but this gradually improved so that in about two weeks it had recovered its normal temperature as far as the patient was able to tell. Ten days after the injury a few blisters appeared on the foot the size of a dime and smaller, a larger one appeared about four inches above the ankle on the outer aspect of the leg. These blisters gradually dried up, forming crusts which gradually darkened in color. Upon removal of the crust from the leg by the physician in charge, the edges of the wound were found to be undermined and the underlying tendons and muscles exposed. There was apparently no tendency to heal.

Examination.—The patient was first seen by us five weeks after the injury. Briefly stated, the leg was normal in color and temperature but presented an undermined ulcer on its outer aspect above the ankle. The base of this ulcer presented bare muscles and tendons covered by a slough. There were smaller gangrenous areas on the foot indicating trophic disturbance. There was foot drop and an

absence of pulsation of the posterior tibial and pedic arteries. Tactile and pain sense of the dorsum of the foot were absent, temperature sense diminished, muscle sense intact. Skin over ankle and foot dry and scaly.

Operation.—The outer side of the leg at the site of the ulcer was explored by making a free opening through the undermined skin and superficial fascia. The former bled freely, but the muscles were ischyaemic, containing no blood and they were very soft and friable. The inner aspect of the leg was then explored and the same condition found. The



limb was amputated above the knee. The popliteal artery contained a well organized thrombus as seen in the accompanying illustration.

There apparently had been a contusion of the second degree type; the intima and media being torn transversely and for a short distance detached from the adventitia, presumedly resulting in retraction and curling in of the loose ends of the intima and media which formed a basis for the thrombus formation with consequent blocking of the artery.

Injuries of this kind are quite uncommon, as this large vessel is so well protected by virtue of its position and the looseness of the surrounding connective tissue affords considerable freedom for movement in a lateral direction; moreover the elasticity of the walls and the fluidity of the contents preclude such injuries. When these injuries do occur they usually follow a violent blow such as the kick of a horse, compression between two cars or a runaway accident as in this instance. The freedom of the intima from evidences of arterio sclerosis makes the case the more unusual. The good color and normal temperature indicating a good blood supply of the skin and superficial fascia, which also was apparent upon incision are interesting. The dry patches resulting from the vesicle formation, and the peeling of the skin indicated, however, the serious trophic disturbance to the deeper parts. The small dry gangrenous patches might have been caused by emboli, local anemia or possibly the result of an injury to the nerves. The gangrene was of a dry type indicating that the artery alone was injured and not the veins.

Schorung[1] collected forty-five cases of contusion of large vessels occurring in the following order of frequency with notes on gangrene following:

Popliteal	20	gangrene in 20
Femoral	11	gangrene in 7
Brachial	7	gangrene in 1
Iliac	2	gangrene in 2
Axillary	1	gangrene in 0
Ulnar	1	gangrene in 1
Radial and ulnar	1	gangrene in 1
Carotid	1	gangrene in 1

This report in which all the cases of popliteal thrombus resulted in gangrene is rather discouraging. However, the more recent work of Carrell and others of removing the clot and repairing or resecting the vessels, making an end-to-end anastomosis or even arterio-venous anastomoses, has made it, perhaps, possible to save extremities in some cases in the event of an early diagnosis and prompt surgical procedure.

1. Strassburg Med. Zeit. Bd., 2, 1905.

Poisoning From Lead Paints.—The reports of the British departmental committee, appointed to investigate the dangers of the use of lead compounds in the painting of buildings, shows the principal source of poisoning to be dust, produced during the mixing of dry, white lead with oil and in the dry rubbing down process. While the first danger is done away with by the use of ready mixed paints, the committee proposes drastic legislation to remedy the second evil. The committee recommends the enactment of a law prohibiting the importation, sale or use of any paint material containing more than 5 per cent. of its drug weight of soluble lead compounds (*Jour. A.M.A.*, July 15, 1916, p. 234).

TRANSACTIONS

OF THE

Clinical Society of the University of Michigan

Stated Meeting, July 12, 1916

The President, UDO J. WILE, M.D., in the Chair
Reported by REUBEN PETERSON, M.D., Secretary

SUPPURATION OF A LARGE DERMOID CYST REACHING TO THE UMBILICUS. EVACUATION AND REMOVAL OF THE CYST PER VAGINAM. RECOVERY.

REPORT OF CASES ILLUSTRATING THE SUBSTITUTION OF THE RECTAL FOR THE VESICAL SPHINCTER.

REUBEN PETERSON, M.D.
(From the Obstetric and Gynecologic Clinic, University Hospital, Ann Arbor, Michigan).

CASE 1. This specimen has just been removed from a patient whose history is rather interesting. She is twenty-five years old, married, with one child three years old. She was well up to the birth of this child but has never been well since. About a year ago she noticed her abdomen was enlarging. Three weeks before her entrance to the Hospital she had a sudden pain in the lower abdomen, followed by high fever. She had been very ill ever since, confined to the bed with fever, loss of weight and strength with every indication of septic absorption.

Examination at entrance showed a cystic tumor extending from the pubes to the umbilicus. The abdominal muscles were rigid and the entire abdomen tender. Very little could be made out by vaginal examination on account of the tenderness, except a mass filling the posterior culdesac, continuous with the mass above. The temperature was 103°, the pulse rapid and the appearance of the patient markedly septic.

The diagnosis lay between a twisted pedicled ovarian cyst with or without infection of its contents and an enormous pus tube. Inasmuch as the mass was very limited and the other pelvic tissues not involved except by adhesions, pus tube was ruled out, leaving the diagnosis in all probability an infected ovarian cyst.

At the operation it was decided to use every endeavor to reach the suppurative mass by way of the vagina in order to avoid contamination of the parietal peritoneum, almost inevitable if treatment through the abdominal route were attempted. The uterus lay to the left and downward. The cervix was drawn sharply upward by a tenaculum on the posterior lip, the posterior vaginal mucosa incised, and the mass finally reached and opened by the sharp pointed scissors. About two quarts of pus were evacuated followed by a complete subsidence of the abdominal and pelvic mass. In wiping out the cyst cavity with a sponge on a long pair of forceps, a mass of hair and fat half the size of the hand was withdrawn, thus establishing the diagnosis of suppurating dermoid cyst of the ovary. The operation was completed by inserting a rubber tube within the cyst and holding it in place by a suture through the incised vaginal mucosa.

The patient's general condition improved after the operation but great quantities of foul smelling pus continued to be discharged through the tube and the vaginal incision. After removal of the drainage tube, the vaginal incision closed rather quickly and the opening had to be enlarged a number of times to provide for drainage. While the temperature was lower and at times reached normal, the patient still continued to be septic from absorption of the pus poured out by the secreting surface of the cyst.

Further treatment of the case presented some interesting problems. Removal of the secreting cyst wall could easily have been accomplished through an abdominal incision, but the dan-

gers of peritonitis even with the greatest care in protecting the uncontaminated peritoneum made me hesitate to adopt this procedure. Fortunately, the patient's vagina was quite voluminous giving hope that a removal of the completely adherent cyst wall could be accomplished from below. Under ether the colpotomy incision was enlarged and the dependent portion of the thick wall of the cyst somewhat freed by the finger from the surrounding pelvic adhesions. The loose edge of the sac was then seized by a pair of strong jawed forceps and pulled down while the finger continued to loosen the adhesions of the upper portion of the sac. During this procedure the body of the uterus was doubled backward and the fundus drawn through the colpotomy incision, thus exposing the pedicle of the cyst and permitting of its transfixion and the final removal of the entire sac. The operation was completed by drainage of the septic pelvic cavity by a rubber tube held in place by a suture through the vaginal mucosa. The patient has made a good recovery, the temperature now being normal and her general condition much improved.

It may be here remarked that surgery has greatly changed in the last twenty-five years as regards the method of approaching pus in the pelvis. Formerly, it was the custom to remove pus tubes through an abdominal incision, the operations being successful in the majority of cases because the pus was sterile. However, in quite a proportion of cases, possibly 10 per cent., the patients died of general peritonitis due to the fact that a mixed infection was present. The chances of the pus being virulent and not sterile are increased when the abscess is outside of the tube and not caused by a Neisser infection. Suppurating dermoids of the ovary are not infrequently the seat of virulent germs and attempts to remove such masses by the abdominal route are apt to result in fatal general peritonitis. Hence, since there is no certain method of determining the exact bacterial nature of the cyst contents, whether it be within or without the tube, it is safer to open and drain such collections through a colpotomy incision. Very seldom is there an operative death when pus in the pelvis is attacked in this manner, and then only when the condition of the patient is very low from long continued suppuration. Later on the pus tube uncured by vaginal drainage can be removed by abdominal incision with safety. However, the difficulty in the above case was that the secreting surfaces of a pus tube and a suppurating ovarian cyst are entirely different. The latter must be removed within a comparatively short time after being opened through the vagina, else the intense purulent discharge which does not lessen owing to the nature of the secreting cyst membrane will lead to the death of the patient through exhaustion.

CASES ILLUSTRATING THE SUBSTITUTION OF THE RECTAL FOR THE VESICAL SPHINCTER.

In my experience vesicovaginal fistulae are not as common as they were twenty-five years ago. This fact I ascribe to improved obstetrics. Most vesicovaginal fistulae, not all, result from gross neglect of the obstetric patient, failure to deliver when the presenting part is low enough to press upon the vesicovaginal septum, the long continued pressure resulting in necrosis of the septum and incontinence of urine. Even if the physician does not feel competent to remove the child, he realizes the danger of delay and sends for a more skilled colleague. Unfortunately, however, there are cases where the bladder has been extensively injured, where almost the entire vesicovaginal septum has sloughed away, at times injuring the ureters, at other times leaving the wall of the vesical opening so near the ureteral orifices as to make closure of the fistula exceedingly difficult. By various methods even large defects can be closed after one or more operations. Once in awhile, however, as will be illustrated by the cases to be reported, for one reason or another, it is impossible to close the fistula with the result that the woman is doomed to a miserable existence from the constant dribbling of urine from the vulva or else some method must be devised for the utilization of the rectal sphincter, the only sphincter in the neighborhood at all comparable with the vesical sphincter. To utilize this sphincter the ureters must be implanted in the rectum or the vaginal orifice may be closed after making an opening in the rectovaginal septum. The first method is not without danger and is usually only employed in cases of exstrophy of the bladder where the ureteral openings in the trigonum are in plain view. The other procedure is without danger to life and is the operation of choice in terrible bladder injuries which cannot be repaired by plastic surgery.

With this brief introduction I would like to report a number of cases from my public and private clinics illustrating the possibilities of the procedure.

Case 1. The first case is that of a woman of thirty who was dreadfully lacerated by instruments after having been in labor for days. She has had complete urinary incontinence

since the middle of last March. As you will see by this picture I pass around, (Fig. 1) there is a mass protruding from the vulva looking not unlike a cystocele or rectocele. In reality it is neither but the fundus of the bladder which has prolapsed through an opening in the vesicovaginal septum almost an inch and a half in diameter. The vaginal floor was a mass of scar tissue in which were completely buried the cervix and the external os.

In spite of the dense scar tissue within the vagina it might have been possible to close the vesical opening if it had not been for another factor in the case. The same trauma which had given rise to the vesicovaginal fistula had entirely destroyed the distal portion of the urethra and that portion of the bladder into



Fig. 1. Prolapse of the posterior bladder wall through large vesicovaginal fistula. Bladder wall at the vulva at first glance looks like a cystocele or rectocele.

which the urethra entered. In other words, the vesical sphincter was completely destroyed.

Under such conditions a repair of the bladder defects whereby the woman would have control over her urine was impossible and I proposed the operation I had found eminently successful in two previous cases. Up to now she has declined, possibly thinking that some other surgeon will be able to do more for her than can I. The real reason, however, I am convinced, is that her husband will not consent to the closure of the vagina. His proposal is that we sew into the bladder a rubber tube, making a tight joint. The rubber tube is to be fitted with a cork so that when the woman feels a desire to empty her bladder all that would be necessary would be to remove the cork. Possibly if his own person were continually bathed in urine he would not be so complacent and would be willing to make any sacrifice to insure his comfort.

CASE 2. The operation under consideration which is illustrated by the diagrams (Figs. 2, 3, and 4) I performed upon a patient in 1904. This was a patient upon whom I had operated for malignant disease of the urethra. So much of the urethra was involved that the vesical sphincter was impaired after the complete removal of the growth. She had incontinence of



Fig. 2. Diagram of a vesicovaginal fistula.

urine and prolapse of the bladder wall through the urethral opening following the operation. She was eager to have anything done which would relieve her of the discomfort of the continual dribbling of the urine. In her case I made an opening into the rectum from the vagina just above the internal sphincter about an inch and a half in length and one inch in



Fig. 3. Opening made through rectovaginal septum.

width, finishing this operation by closing the urethral opening and the vaginal orifice. The operation was a complete success and made the patient very comfortable. She held the urine in the rectum for three or four hours without any rectal irritation. She was perfectly comfortable for seven or eight years until her death from malignant disease of the cecum.

Case 3. This patient was operated upon in the University Clinic, during my absence, by Dr. Cummings. The patient was a woman of 65 who had extensive sloughing of the bladder following a vaginal hysterectomy. There was a large mass of everted bladder mucosa in the vagina and the ureteral openings were so near the edge of the opening as to preclude closure of the fistula. The result in this case after a number of operations has not been entirely satisfactory since it has not been possible to completely close the vagina, a small opening persisting near the site of the urethra, through which a small amount of urine escapes. While not a perfect result, the patient is quite satisfied when she compares her present condition with what she suffered prior to the operation.

Case 4. The last case is that of a woman of 38 who was operated upon in the Clinic in February, 1916. The injury to the bladder



Fig. 4. Vesicovaginal and rectovaginal fistulae. Closure of the vagina (Colpocleisis). Passage of urine, menstrual blood and feces through anus.

occurred in November, 1915 following an instrumental delivery at her sixth pregnancy. Upon entrance to the Hospital she had lost fifty pounds and was suffering frightfully from the irritation caused by the incontinence.

Examination under ether showed the vagina occluded by dense adhesions, not a trace of the cervix to be felt or seen. There was absolutely no give to the vaginal walls and an attempt to loosen the dense adhesions about the bladder opening, which was as large as the thumb, completely failed. At a subsequent operation colpocleisis with the formation of a rectovaginal opening was performed. The operation was successful except for a small opening in the colpocleisis wound which healed before the patient left the Hospital.

I had told the patient that she would have to have a final operation for removal of the ovaries to stop menstruation since no cervix or cervical opening had been found on the previous operation. Naturally dreading any further surgery she was delighted to report to me just before she left the Hospital that her menstruation had come on, as she was voiding urine,feces, and blood by way of the anal sphincter. Naturally, I told her to wait and see what would follow. I heard from her recently and she is in the best of health and is perfectly satisfied with the result of the operation. Time alone will show whether the ureters will become infected from the rectal opening, although reasoning from other cases where the colon bacillus can gain access to the uterus, I do not expect infection will occur.

I have in preparation an extensive paper upon this far from ideal surgical procedure but one that gives great relief to women who otherwise would be constant sufferers.

DISCUSSION.

Dr. Frederic M. Loomis: This operation is, of course, not a matter of choice, but a last resort, yet it illustrates very well that in almost any surgical condition there is at least one way out. The most obvious criticism is that infection of the bladder, and thence ureteral infection and infection of the pelvis of the kidney might follow. As a matter of fact this does not occur. In the cases on record there is no ascending infection if the bladder is not disturbed. It seems to us that the fecal matter does not go into the vagina to a very great extent. The samples that I drew from this patient contained urine but she has passed nearly solid fecal matter. She did not have diarrhea. The results of these two or three cases I have seen were very happy and have not interfered very much after all with marital relations which were practically impossible under preceding conditions, the vagina being excessively tender, irritable and covered with urine.

Dr. Peterson: I may add that the ureters are not infected after this operation because the ureteral openings into the bladder are not interfered with. Some fifteen years ago I performed a number of experiments on transplantation of the ureters into the bowel. Wherever the ureters were cut across and transplanted into the bowel, infection always occurred although a number of dogs recovered from the pyelonephritis. On the other hand, in transplantation of the vesical trigone without injury to the ureteral openings, infection did not take place. That is the explanation of why the infection does not take place in the cases reported.

1. A CASE OF CARCINOMA OF THE PANCREAS.

2. A CASE OF CARCINOMA OR LUES OF THE STOMACH.

Harry B. Schmidt, M.D.
(From the Clinic of Internal Medicine, University Hospital, Ann Arbor, Michigan).

Case 1. This patient, Mr. B. S., entered the Medical Clinic July 3, 1916, complaining of weakness and a large tender mass in the right upper abdomen. He is 25 years of age, married and a farmer by occupation. His family and personal history are negative.

On May 30, 1916, at night, after working with jackscrews and doing heavy lifting all day, he awoke in a drenching sweat. He complained all the next day of sharp jerking pain in the right lower abdomen and soreness all over the right abdomen. However, he continued to work. The following week he entered the hospital at Hastings, where he was in bed for twelve days. At this time he was very weak. There was a hard tender mass in the right upper abdomen, which has gradually grown toward the epigastrium. On June 26, 1916, the patient went home and remained in bed until he came to the Hospital. He has had no headaches nor cough and has never been jaundiced. There has been no dyspnea and he has never vomited, but has a very poor appetite; the bowels are negative and there are no night sweats. For some time, he has had a fever. His best weight is 165 pounds. At present he weighs 125 pounds. His blood pressure is normal. Examination of the blood shows 3,230,000 red cells, 18,200 whites, and 52 per cent. hemoglobin and 81 per cent. polymorphonuclears (differential count). The sputum, stools, and urine are negative. Stomach examinations showed nothing returned following a shredded wheat breakfast. X-ray examination of the abdomen showed nothing in particular except an enormous enlargement of the liver. While the patient was in the Hospital his temperature (remittent type) ranged from 99 to 102.8°. The pulse rate was correspondingly high although the respirations were normal.

On examination nothing was found with the exception of considerable emaciation, moderate anemia, and a mass extending from the level of the left rib five fingerbreadths below the costal margin on the right side. This dulness, corresponding to the liver, could be palpated in the abdomen, the edge being perfectly smooth and rounded. The surface of the liver was everywhere smooth. On percussion the diaphragm was found rather high in the back and the right lung border did not move well. There was a definite widening of the intercostal angle on the right side. This sign has been reported by Hoover to be due to pressure below pushing the diaphragm upward. There was marked muscle spasm and tenderness in the right upper abdomen. A diagnosis of suppurative peritonitis probably from an acute appendicitis was made with a possibility of pus below the diaphragm pushing the liver downward. The patient was explored on July 8 in the Surgical Clinic. The liver was found enormously enlarged, studded with numerous firm white nodules, presumably carcinomatous. The pancreas were enlarged, hard and nodular and a few enlarged glands were palpated about the pancreas. A nodule was removed from the liver for pathologic examination. The pathologic diagnosis was secondary carcinoma of the liver.

Case 2. A case of either carcinoma or lues of the stomach.

Mr. R. L., aged 26, married, entered the Hospital July 3, 1916. His chief complaint is more or less continuous pain in the left epigastrium. The family history was negative. At the age of sixteen he entered the navy, contracted malaria in Panama and was treated for same at the naval hospital. He had gonorrhea at the age of 17. He denies syphilis. His wife is living and in good health. From September to October, 1915, he was treated for gastric ulcer. February 25, 1916, he contracted pleurisy which lasted until the latter part of April. His present illness began in April, 1916, with a dull aching pain, which had a tendency to make the patient nauseated. He sleeps poorly and vomits his meals almost immediately after eating. He has never noticed any coffee ground vomitus. His stools are constipated and dark. For the past four months he has had drenching night sweats which come on early in the morning and last a short time but are unaccompanied by chills. At the time the patient was treated for gastric ulcer, he spat blood following a vomiting attack. He has had no cough and there has been no sputum. He feels very weak and has lost forty pounds in weight. The temperature (remittent type) ranges from 99 to 103°. There has been no jaundice but the patient is pale and emaciated. The heart and chest are negative.. There is a light fulness in the left epigastrium with marked muscle spasm and tenderness and signs of counter-irritation. An indefinite irregular mass can be felt to descend during inspiration in the left

epigastrium. The spleen cannot be made out. The liver, apparently, is not enlarged. The urine and blood pressure are normal. Shredded wheat breakfast,removed in fifty minutes, shows an achlorhydria but is otherwise normal. The stool is negative. The blood shows 3,200,000 reds, 8,200 whites and 55 per cent. hemoglobin. There are 78 per cent. polymorphonuclears with an occasional myelocyte. The Wassermann reaction is negative. An X-ray examination of the chest is negative. The X-ray report on the gastrointestinal tract is very interesting. (I have some of the plates here for inspection). The diagnosis by the roentgenologist is cancer or lues, with a suggestion that at his age the latter diagnosis is probably the true one.

The interesting points in these two cases are that the patients are young and approximately the same age. They both have a high remittent temperature with leucocytosis. We were misled as to the diagnosis of the first case on account of age, temperature, leucocytosis and the acuteness of the illness. In the second case, while the patient has not been so acutely ill, there has been continuous high, remittent temperature with a leucocytosis and pain in the abdomen. The X-ray plate shows a great defect in the stomach, which is probably carcinomatous.

While carcinoma has been reported even in infants, it is generally acknowledged that it is very rare in the young, especially in those below thirty years of age. This type of temperature in carcinoma is rarer still. The first author to emphasize the appearance of temperature in cancer was Wunderlich in 1870, who stated that fever in cancer was rare, that the temperature was usually normal or subnormal but that fever might occur in the later stages of the disease. He also remarked that fever was present (intermittent, in some cases in the early stages of the disease and that its presence indicated a rapidly fatal course. Nothnagel has considered that fever was a symptom of cancer itself and Osler and Rolleston are of the same opinion.

Freudweiler has made a very complete study of fever in malignant disease. He examined case histories of 475 patients in which the diagnosis was made with certainty. There were 265 cases of cancer of the stomach and thirty-eight cases of cancer of the liver and gallbladder. Other cases covered almost all organs of the body. He classified these cases according to the type of fever present. The first were those with continuous temperatures, second with an intermittent temperature, third those with a malarial type, and fourth those with isolated or short periods of temperature of less than three days duration. There were 127 cases of uncomplicated carcinoma with fever. Of the 265 cases of cancer of the stomach, 26 per cent. had fever. Of the twenty-eight cases of cancer of the liver or gallbladder, seventeen cases or 45 per cent. had fever.

With 127 cases of uncomplicated carcinoma, he found that 1½ per cent. had continuous fever, a little over 10 per cent. had a remittent or intermittent type of fever, 3.5 per cent. had a malarial type of fever and that 9.3 per cent. had an occasional temperature of less than three days duration. Of the entire number of cases 24 per cent. of the uncomplicated carcinomata have a temperature due to the carcinoma itself. In the light of recent discoveries this temperature in all probability is due to protein poisoning. Some one has called attention to the fact that temperature may be of common occurrence in carcinoma of young people but I can find nothing in the literature to confirm this statement.

DISCUSSION.

Dr. Reuben Peterson: The question of temperature in connection with carcinoma in various parts of the body is exceedingly interesting because of its possible importance in differential diagnosis. Temperature is most commonly seen in connection with carcinoma of the uterus, both of the body and cervix. However, this is rather outside of the question under discussion since here we have to do with a mixed infection due to tissue necrosis and subsequent absorption through the vaginal tract. In fact any carcinoma of the mucous membrane, exposed to the outside air, like carcinoma of the stomach or rectum, may be the habitat of a variety of organisms which may give rise to fever.

Carcinoma of the ovary is not uncommonly accompanied by fever which at times may be pretty high, as much as 101 to 102°. Since carcinoma of the ovary may occur in young people, young women under thirty, and is always accompanied by loss of flesh and strength, it may on account of fever, be confused with tuberculous peritonitis; especially confusing may it be since in both conditions there may be ascites.

Dr. Udo J. Wile: Having arrived late, I did not have the pleasure of hearing the reports of Dr. Schmidt's cases, but I know something about them, as he has talked over the details of the cases with me. Dr. Peterson's point as to the age of carcinoma patients and the relative value of age with regard to the diagnosis of them should be emphasized. More and more we are getting away, I think, in all forms of carcinoma from the so-called carcinoma age. I have seen carcinoma in a man of 19. This was a case of epithelioma. Certain forms of malignant neoplasmata occur at even an earlier age than that, such as the endotheliomata.

As to the occurrence of fever, the point of considerable interest lies in the occasional association of ulcerative infections in carcinoma and the asso-

ciated fever from absorption. I recall a case of a patient who was dying from carcinoma of the pharynx secondary to a large gummous ulcer. The extensive involvement of a distinctly phlegmonous nature in the side of the neck gave rise to a typical picture of sepsis. Of the incidence of fever in carcinoma of the stomach, I have no knowledge.

A CASE OF LEAD PALSY OF THE UPPER ARM TYPE.

CARL D. CAMP, M.D.
(From the Neurologic Clinic, University Hospital, Ann Arbor, Michigan).

The case that I have to report is that of a man, aged 34, a carriage painter, who came to the Hospital because of difficulty in the use of his arms. The family history is unimportant. He said that he had had three attacks of lead poisoning, meaning thereby cramps in the abdomen. The first attack was eight years ago and lasted about three weeks; this attack did not affect the arms. The second attack was five years ago and the third attack was about two years ago. These attacks were all the same. He had never had any other illness.

His difficulty was chiefly in the use of his shoulder muscles. The examination showed that the patient was fairly well nourished although of somewhat spare build. The pupils reacted sluggishly to daylight. Neither eyeball rotated outward as far as it should. The tongue protruded straight, was tremulous, but not atrophied. The teeth were decayed and the gums showed a marked lead line. The biceps and triceps jerks were present and equal on the two sides and the knee jerks were equal and about normal. The Achilles jerks were equal and normal. There was no atrophy of the legs and no tenderness of the nerve trunks. Apparently the nerve head and the retina were edematous, but there was no choked disc. The arteries of the fundi were small and also the veins, but there was no evidence of an inflammatory reaction and no hemorrhages. It was a peculiar looking retina and I have seen it before in cases of chronic lead poisoning. Possibly it is in connection with nephritis, but the urine in this case showed nothing abnormal except a few granular casts. He said that his vision had been affected for a long time. The grip in both hands was weak but there was no localized atrophy in the hands. The ordinary case of lead poisoning shows an atrophy of the interossei muscles and, in its later stages, develops a deformity. There was no wrist drop but extension of the wrists was weak. Flexion of the arms was strong and the supinator longus also contracted strongly. Extension of the arms was very weak and he was totally unable to abduct the arms. The pectoral muscles were not paralyzed. He could raise both shoulders, showing that the trapezii muscles were normal. The paralysis was in the deltoid and triceps muscles only and the muscles affected by the paralysis showed reactions of degeneration to the electric current. It is a rather important diagnostic point that there was no fibrillation of these muscles. We find in some cases of atrophic paralysis of the shoulder, especially in cases of progressive muscular atrophy of the spinal type, that there is a constant fibrillation of all of the muscles.

The unusual feature of the case is the distribution of the palsy. You know that lead palsy is usually characterized by bilateral wrist drop which may begin in the hand most used. In the right-handed painter it is the right hand that is affected first. In the old typesetter it was in the left hand because that was the hand in which he held the heavy stick of type. It is the upper distribution of the musculospiral which is affected in this case rather than the lower distribution.

Another interesting point about this case was that his blood Wassermann was one + positive. In view of the fact that he had a sluggish pupillary light reaction it was thought possible that the palsy might be due to syphilis, but lead poisoning may give a positive Wassermann reaction and the disturbance of the pupillary reflex to light is explained by the effect of the lead upon the retina and optic nerve. That this palsy is not of syphilitic origin is proved by lumbar puncture. The spinal fluid was colorless, contained two cells to the cubic millimeter and was negative to albumin reactions and the Wassermann reaction. We did not test for lead in the urine or feces because such tests in chronic cases of this kind are generally unsatisfactory. One does find, however, in chronic lead palsy changes in the blood, characterized by anemia and peculiar degenerative changes in the red cells. On June 30 this patient had 3,500,000 red cells with 50 per cent. hemoglobin. Blood smears show some basophilic degeneration of the red cells.

DISCUSSION.

DR. QUINTER O. GILBERT: I examined the smear from this man today. There was an increase in the number of whites, I should judge from the smear, about 12,000. Polymorphonuclear cells 44 per cent., eosinophiles 2 per cent., basophiles 1 per cent., (total of 47%) large lymphocytes 18 per cent., small lymphocytes 14 per cent., large mononuclears 15 per cent., transitionals 6 per cent. This shows a marked

decrease in the polymorphonuclear cells and an increase in the mononuclear cells, both in the large mononuclears and transitional group, and also in the lymphocytic group. We don't know the exact significance of the increase in the mononuclears in the blood stream. It is a group of cells which is receiving a considerable amount of attention by hematologists at the present time. They are certainly increased in some of the toxic anemias and in the majority of cases of malignant diseases.

The red cells show the so-called basophilic granules on the average of one cell to about every four or five fields of oil immersion. These cells are not unlike the cells of any other condition of severe anemia. The most striking examples are found in severe cases of pernicious anemia. They are also very common in leukemias and in any other severe anemias. The cells are characterized by irregular granules with stain blue with basophilic dyes. They are considered to come from either nuclear fragmentation or from cellular degeneration products. They occur in lead poisoning but are not specific for this condition. They might be considered as evidence of a toxic condition upon, more especially, the young red cells and are considered by some to be associated with other basophilic properties of the red cells, and indicate youth more than degeneration.

REVIEW OF THE MONTH'S RADIOGRAPHS.

James G. Van Zwaluwenburg, M.D.

(From the Clinic of Roentgenology, University Hospital, Ann Arbor, Michigan).

Case of congenital absence of the tibia.

Case of absence of two epiphyses of the tibia.

Case of multiple osteomyelitis and inflammation of the third metacarpal.

Case of supposed Colle's fracture, showing shortening of the fourth metacarpal.

Two cases of anomaly in the lumbosacral region.

Case of heart displaced to the right with portion of the right lung in collapse. Provisional diagnosis atalectasis. Postmortem showed transposition of the great vessels.

Case of unerupted cuspid tooth.

Case of bilateral dislocation of the hip due to double tuberculosis of the hip joints.

Case of periosteal thickening of the shaft of the humerus with destruction of the head—suggestive of lues, probably tbc.

Case of dislocation of the elbow together with comminuted fracture of the epiphyses of both condyles with locked elbow.

Case of tumor of the brain, erosion of the cranial floor.

Case of ossification of the auricle of the ear.

Case of depressed fracture of the skull.

Case of bullet in the tip of the temporal lobe.

Case showing repair of the ribs after resection.

Case of intrathoracic tumor, character unknown.

Postpneumonic process with scar tissue formation and small abscesses.

Case of doubtful shadow in the ureteral region, probably calcified retroperitoneal gland. History of having passed two stones.

Case of injected pelvis of the kidney.

Case of extensive carcinoma of the fundus of the stomach.

Two cases of gastric residue and retention in the upper end of the small bowel. Appendicitis. (See comments below).

Case of high jejunal stasis in an obese woman, no diagnosis.

Case of Lemke: This is the lantern slide of the case which Dr. Schmidt reported, the young man with pain in the left epigastrium. From the radiographic point of view there are only two things which have been known to give this form of picture. The vast majority of them are carcinoma of the stomach and the remainder are syphilis, with this distinction, that in the defect of syphilis the outline is apt to be smoother, the impress is more or less that of a digitation and is generally due to scar tissue formation. In view of this man's age I thought this was highly suggestive of syphilis.

Case showing descent of the splenic flexure with splenic tumor.

Case of safety pin in the esophagus.

Case of screw in the right primary bronchus, later in the left bronchus.

COMMENTS ON TWO CASES OF APPENDICITIS WITH GASTRIC AND HIGH ILIAC RESIDUE.

These two cases of gastric residue are here introduced to illustrate a combination of findings that we have met rather frequently. The development of "syndromes" is rather frowned upon in radiographic circles at the present time, and at best such evidence must be inferior to direct evidence of morphologic changes in the gut. None-the-less, if the study of "syndromes" is going to advance our knowledge of the physiology of digestion we can not afford to neglect their study.

There are two very distinct pictures that we commonly see in appendicitis, the one is that shown here, viz., a six hour gastric residue and

a high distribution of the barium in the small bowel, and the other with pyloric spasm, hyperkinesis, a secretion zone, and a stasis in the terminal ilium. The latter is generally conceded to result from a reflex arising in the appendiceal region, producing motor and secretory changes in the function of the stomach and bowel. The clinician has for a long time recognized the occurrence of a hyperacidity of appendiceal origin.

The inhibition shown in these slides probably rests on a similar basis, but resulting in the opposite effect. A greater degree of inhibition might very easily lead to nausea and vomiting.

Attempts to explain these two contradictory sets of findings lead to pure speculation. We have been entertaining the hypothesis, that the inhibitory reflex is seen principally with inflammatory lesions in the cecal region, while the spasms and hyperacidities occur with mechanical difficulties such as adhesions, kinks, and torsions secondary to inflammations of the appendix, gallbladder and ascendans. In confirmation of this supposition we have seen it in its most marked development in a case of acute appendicitis.

It appears probable that a similar "high residue" occurs with other inflammatory processes in the neighborhood of the small bowel. Whether it depends on peritoneal irritation, or on mucous membrane lesions, whether it occurs with pelvic lesions, are some of the questions that await investigation.

Cocaine Substitutes.—Treasury Decision 2194 places "alpha and beta eucaine or any of their salts or any synthetic substitute for them" under the provisions of the so-called Harrison Narcotic Law. To this ruling, the Farbwerke-Hoechst Company, the manufacturers of novocain, a synthetic substitute for cocain, took exception and, by agreement, a test case was argued before the United States District Court of New York. It is reported that the court took the case from the jury and ordered a verdict for the Farbwerke-Hoechst Company on technical grounds (*Jour. A.M.A.*, July 15, 1916, p. 208).

Aromatic Spirits of Ammonia in Shock.—Horatio C. Wood, Jr., explains that any stimulating effect which may be observed after the oral administration of aromatic spirits of ammonia is due either to a psychic effect or to its local irritant action on the gastric mucosa, just as the irritation by ammonium carbonate, in the form of smelling salts, of the mucous membrane of the nose may reflexly excite the medulla (*Jour. A.M.A.*, July 15, 1916, p. 231).

Phenol Antidotes.—Various substances, fixed oils, glycerin, diluted sulphuric acid, the soluble sulphates of the alkalies and alkali earths, have been recommended as antidotes or prophylactics of phenol poissoning. M. I. Wilbert discusses the value, or lack of value, of the various reagents proposed as antidotes to phenol poisoning. He points out that glycerin will not prevent the production of gangrene or the absorption of phenol. Wilbert points out that the other substances mentioned have been found inefficient as detoxicants for phenol, and in many instances distinctly harmful. He further notes that, while the value of alcohol as an antidote for phenol poisoning has been scientifically disproved, yet even as late as 1915, the fallacy that ethyl alcohol is an antidote to phenol has been embodied in state laws designed to restrict the sale of phenol. Recent investigation, carried out in the Hygienic Laboratory, shows that in the presence of water neither alcohol nor glycerin has any detoxicating effect on phenol (*Jour. A.M.A.*, July 15, 1916, p. 233).

Poisonous Properties of the Garden Daffodil.—The bulbs of the garden daffodil (known botanically as Narcissus pseudonarcissus) contain an alkaloid (or alkaloids) whose physiologic action differs according to the stage of growth of the plant. The alkaloid extracted from the flowering bulb produces dryness of the mouth, checks cutaneous secretions, dilates the pupil, quickens the pulse, and slows and weakens the heart contractions. The alkaloid extracted from the bulbs after flowering produces copious salivation, increases cutaneous secretion, contracts the pupil, and produces slight relaxation of the pulse, slight faintness and nausea. Such widely divergent physiologic effects indicate that there must be considerable differences in the nature of the alkaloids at the different times mentioned. Since the daffodil is so common in gardens it might be well to consider it in poisoning of mysterious origin (*Jour. A.M.A.*, July 22, 1916, p. 200).

Hexamethylenamin in Anterior Poliomyelitis.—It has been shown that hexamethylenamin has no germicidal activities, except in an acid medium. Therefore, it is of special value only in infections of the pelvis of the kidney, ureters, bladder and uretra when the urine is acid. It cannot be expected to exert germicidal activity in the spinal fluid, which is alkaline and hence is of no value in the treatment of anterior poliomyelitis (*Jour. A.M.A.*, July 22, 1916, p. 309).

Novocain.—Novocain was introduced about twelve years ago with the claim that it was from one-sixth to one-tenth as toxic as cocain. Hatcher and Eggleston have recently shown that the toxicity of cocain varies widely with different individuals and with the rate of its absorption into the circulation, and that novocain shows far greater variations. The authors are of the opinion that novocain has a distinct field of usefulness, but call attention to the fact that death has followed the clinical use of small doses and that toxic symptoms have been reported by numerous observers. (*Jour. A.M.A.*, Aug. 26, 1916, p. 685).

The Journal
OF THE
Michigan State Medical Society
ISSUED MONTHLY UNDER THE DIRECTION OF THE COUNCIL

Arthur M. Hume, Chairman Owosso
Guy L. Kiefer Detroit
W. J. Kay Lapeer
W. J. DuBois Grand Rapids

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All communications relative to exchanges, books for review, manuscripts, news, advertising, and subscription are to be addressed to Frederick C. Warnshuis, M.D., Powers Theatre Building, Grand Rapids, Mich.

The Society does not hold itself responsible for opinions expressed in original papers, discussions, communications, or advertisements.

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November

Editorials

AN INNOVATION.

Under the County Society News in this issue will be found the report of a distinct innovation that has been introduced in this state by the Jackson County Medical Society.

This Society secured the presence of Dr. Cabot of Boston for a week. Every morning during that week Dr. Cabot conducted a Clinic at one of the local hospitals. Each evening there was held a meeting at which Dr. Cabot delivered a lecture. Many cases were presented, their etiological, pathological, diagnostic features were discussed and their treatment outlined.

There can be no doubt but that this series of meetings resulted in serving as a potent stimulus to the profession of Jackson County. Naturally there must follow an increased spirit of interest in scientific and modern medicine. There are going to be better doctors in Jackson County and the local society is bound to exercise an influential power in the continuance of such a post-graduate course of study.

The plan at once appeals to us and we are indeed eager to see the Jackson County example emulated by a large number of our county organizations. It affords county officers a new avenue of development and endeavor. We congratulate the Jackson County members and shall look forward to an early repetition of such a commendable innovation. It is refreshing, indeed, to learn of this distinctly new sphere of county society work and endeavor. May this inspiration spread like wildfire throughout Michigan.

STANDARDIZATION OF HOSPITALS.

The Michigan State Board of Registration in Medicine adopted the following resolution at its October, 1916 meeting:

"That candidates desiring to secure license and registration to practice medicine and surgery in Michigan shall present, in addition to the present requirements, a certificate certifying that he or she has served a term of one year of twelve months in a recognized and approved hospital.

"That this requirement becomes effective to all those matriculating for a medical course and degree after September, 1917."

The passage of this resolution is in compliance with the steps in the advancement that are being made in medical education. Michigan is but keeping abreast with sister states.

The adoption of this resolution is of pertinent and vital interest and concern to the hospitals of this state. The Board will in due time set forth a standard of requirements that must be met by hospitals. Unless such a standard is instituted and maintained the interne of that hospital will be in possession of a certificate that will not be recognized and he will be unable to secure a Michigan license. It therefore becomes incumbent upon the hospital authorities to comply with the prescribed standards if they hope to secure competent internes.

Anent this, New Jersey has adopted a standard of minimum requirements. The Rockefeller Institute has appropriated a sum of some $100,000 to conduct a hospital survey. The American College of Surgeons is co-operating and will with Council on Education of the A. M.A. recommend a standard of Hospital Requirements, Equipment, Service and Efficiency.

It now is incumbent upon hospital officials and Boards to become aggressively active.

THE NURSE ANESTHETIST.

A definite movement is being organized with the end in view of bringing to a definite end the administration of anesthetics by unlicensed persons in every state of the middle west in which such an action can be secured.

In Ohio a petition, signed by prominent physicians, surgeons, and anesthetists was presented to the State Board. Upon receipt of that resolution the Ohio Board adopted the following resolution:

WHEREAS it has been charged in a petition, signed by many well-known and reputable physicians, that the law regarding the administration of anesthetics by others than licensed physicians, has been systematically violated by the Lakeside Hospital, Cleveland, Ohio, and that courses in anesthesia are given nurses in Lakeside Hospital for the purpose of and with the intent to violate the above-mentioned law.

"BE IT RESOLVED, That until these charges are disproven and such courses, if given, discontinued, that all recognition of the Lakeside Hospital as an acceptable training school be withheld and recognition of its graduates as registered nurses be denied."

If this action on the part of the Ohio State Medical Board to abolish the nurse-anesthetist abuse, does not suffice, the Interstate Association will present evidence to the Board warranting prosecution under the law.

The movement should and must receive the approval and support of the United profession. The administration of an anesthetic should never be intrusted to any but skilled individuals, trained to select the safest agent for each individual case. That a nurse, after three years hospital training and a few months experience in the giving of an anesthetic, is deemed a competent anesthetist is preposterous if not criminal. Such an individual is wholly incompetent to make a physical examination, to detect renal, circulatory and respiratory defects. Neither can such a one estimate the variance from the normal that disease or surgical conditions have produced. Consequently there will be evidenced a marked inability to select the safest indicated anesthetic agent or to be alert to the precautions that must govern its administration.

It is, from a legal standpoint, unlawful and a violation of the Michigan Medical Act for other than a registered physician to administer an anesthetic. They who violate this law are amenable to its penalties. It is to be hoped that the practice will become obsolete in Michigan.

PUBLIC HEALTH INSURANCE.

The inevitable drift in this country to health insurance, which presents new problems to the medical profession, requires the earnest thought of every physician. Each practitioner should consider what improvements he can suggest over the tentative plans, with the present choice of administrative arrangements, with the provision for a medical officer, and with the close co-operation between hospitals and the insurance system. Each physician should address himself particularly to the as yet unsolved problem of the rate and the method of payment. As a result of such careful thought it will be possible to evolve an organization which not only will do no injury to the profession, but which will improve the medical service available to the American wage-earner.

STATE TUBERCULOSIS SURVEY.

We are publishing in this issue a report of the Tuberculosis Survey that is being conducted by the State Board of Health. Although it deals largely in generalities it imparts the scope of the work that is being undertaken. It is therefore impossible to draw any positive deductions or formulate definite conclusions.

It is to be hoped that at the conclusion of the two year's survey that the results will justify the energy expended, the funds disbursed and that the state legislature will have convincing data presented to them to induce the appropriation of funds to control, if not eradicate, the disease throughout the state.

Editorial Comments

Clipping *Missouri State Journal*:

"Michigan State Medical Society has increased the annual assessment of the members of the component county medical societies from $3 to $3.50 per annum, including subscription to the *Journal*. This step was made necessary to meet the increased

cost of printing the *Journal*; but even such a sum is an exceedingly modest contribution to the organization that extends as much material benefit and professional influence to its members as does the state medical association. The *Michigan State Medical Journal* occupies a notable position in the forefront of state medical journals so we are glad that it will not be abridged in any of its departments—a step that would have been absolutely necessary if the increase in dues had not been adopted."

We are appreciative of Dr. Goodwin's friendly appraisal of *The Journal*. We are inspired to continue to merit his valued approval.

A John B. Murphy $300.000 Memorial Fund is being raised. It is proposed to cause the fund to be expended in the erection of a suitable building in Chicago for the permanent headquarters of the American College of Surgeons. A mail vote upon the question of locating the College Headquarters in Chicago has been taken. Dr. Murphy was always keenly interested and active in College's object and efforts and it would be indeed an appropriate and a lasting memorial to him who held such a prominent place in American Surgery.

The following colleges in Michigan are approved as giving acceptably the first two years of the college course required for entrance into Medical Colleges: Albion, Adrian, Alma, Detroit, Junior, Hope, Kalamazoo, Michigan Agricultural, State Normal, Northern State Normal, U. of M., Western State Normal.

We are informed by Councilor Church that the Calhoun County Medical Society intends extending an invitation to the State Society to hold its Fifty-second Meeting in Battle Creek.

The co-operative exhibition of patronizing those who use the advertising pages of *The Journal* was never so imperative as at the present time. Our readers are invited to observe this request during the winter when efforts are being set forth to renew contracts and to secure a larger number of them. You can render this assistance if you will but take the pains to remember our advertisers when purchasing new equipment or additional supplies.

We refer our members to the excellent reports of the officers and committee's of the Wayne County Society. They are published under the Society News.

Deaths

Dr. J. W. McMeekin of Saginaw died at his home, Oct. 3 after an illness of but two days. His death was a shock to everyone in his vicinity. Dr. McMeekin was honored by the profession, was finely educated and a leader in chosen work. The city of Saginaw has sustained the loss of one whose place cannot be filled.

Dr. Timothy Lowthian of Unionville was found dead in his office on Oct. 1. His death was probably the result of an attack of heart failure.

State News Notes

Legislation has recently been enacted which will provide for approximately 300 additional medical officers in the Medical Corps of the United States Navy.

The pay ranges from $2,000 per year, with quarters or an allowance therefore, for assistant surgeons with the rank of Lieutenant, Junior Grade, to $8,000 with allowances upon attaining the grade of Medical Director with the rank of Rear Admiral of the upper half.

Applicants must be between the ages of 21 and 32 years, citizens of the United States, and must submit satisfactory evidence of preliminary and medical education. The examination for appointment in the Medical Corps consists of two stages, the first stage, securing appointment in the Medical Reserve Corps, and the second stage, securing an appointment as a commissioned officer in the regular Medical Corps.

After the candidate passes the preliminary examination he attends a course of instruction at the Naval Medical School. During this course he receives full pay and allowances of his rank, and at the end of the course he takes a final examination. Two of these courses begin each year, one commencing about the first of October, and the second course beginning early in February.

The examinations are held in several of the coast cities in the United States, both on the east coast and the west coast, and also at Chicago, Ill.

Literature describing the Navy as a special field for medical work, and circulars of information for persons desiring to enter the Medical Corps, may be obtained by addressing the Surgeon General, U. S. Navy, Navy Department, Washington, D. C.

President Biddle has appointed the following committee to investigate the advisability of the State Society undertaking a Health and Accident Insurance feature: F. B. Tibbals, Chairman; W. H. Sawyer and W. T. Dodge.

The Detroit Eye, Ear, Nose and Throat Hospital has been remodeled, enlarged and has been reopened for the diagnosis and treatment of diseases of the eye, ear and respiratory tract.

Dr. A. W. Ives was elected President; Dr. W. L. Babcock, Vice-President, and Dr. H. A. Reye, Secretary of the Detroit Neurological Society.

Dr. H. W. Yates was married October 12, but we have been unable to learn the bride's name. They are spending their honeymoon in Honolulu.

Wayne County Society was able to return 50 per cent. of the subscriptions made for the entertainment of the A.M.A.

Dr. W. C. Wagner of Grand Rapids was found guilty in the United States Court of using the mails to defraud.

Dr. E. J. Bernstein formerly of Kalamazoo, is now located in Detroit.

Dr. A. F. Fischer was re-elected President of the Michigan State Anti-Tuberculosis Society.

Dr. G. H. Yeo and Miss Ernestine Bishop, both of Big Rapids, were married October 3.

Dr. G. A. Conrad of Houghton has been appointed Chief Physician of the Stanton mines.

December 3 to 10 has been designated as Tuberculosis Week throughout the United States.

The Detroit Receiving Hospital during the first year of its work admitted and treated 14,000 cases.

County Society News

BRANCH COUNTY

The regular quarterly meeting, of the Branch County Medical Society, was held at Library Hall, Coldwater, on Tuesday, Oct. 17, 1916.

Dr. W. A. Griffith of Coldwater, read a paper on "The Keeping of Case Records and Accounts." Dr. Griffith exhibited and explained his system of keeping records and accounts, and brought out the fact of the satisfaction derived in being able to refer to a comprehensive record, not only as an advantage in practice, but in court proceedings. "It also adds to one's professional thoroughness in the estimation of the patient, as he sees that you have his case constantly under surveillance."

Dr. Ray Whitmore of Quincy, gave an exhaustive treatise on "Endocarditis." "This complication should be watched for in all acute conditions, especially acute arthritis, tonsillitis and gonorrhea. It's presence is no contraindication for the usual treatment in most acute conditions, and unless severe, should not be actively treated. The principal reason that it should be watched for is that convalescence can be guarded and prolonged, so that the heart may have opportunity for as complete recovery as possible."

The officers of the Society were constituted a committee to arrange for the annual banquet, which will occur at the time of the annual meeting—the third Tuesday in January.

W. H. BALDWIN, Secretary.

GRATIOT-ISABELLA-CLARE COUNTY

The G. I. C. held a very good meeting at the Calkins House in Clare. Sept. 19. Dr. B. H. McMullen of Cadillac read a very interesting paper on Appendicitis. This was discussed by nearly everyone present. By vote the Secretary was directed to assign to different members parts in the general subject of Infantile Paralysis for the next meeting in October at Shepherd.

The October meeting was held in the Taylor House at Shepherd Oct. 12. Fourteen member and three visitors were present. The following program was carried out.

Etiology.
Dr. W. G. Young.

Diagnosis.
Dr. G. H. Pullen.

Prophylaxis.
Dr. E. H. Foust.

Treatment of the Acute Attack.
Dr. E. L. Street.

Treatment of the Paralysis.
Dr. T. J. Garney.

These papers aroused quite an interesting discussion.

IONIA COUNTY

Our October meeting was held in the City Hall. October 12, 1916. Dr. Walter Wilson, Jr. of Detroit read a paper upon the Diagnosis and Treatment and Prognosis of Heart Lesions. Discussion by Drs. Knap, Kitson, Grand and McCann.

The following officers were elected for 1917.

President—Dr. H. Maynard, Ionia.

Vice Presidents—Drs. G. A. Stanton. Belding; F. L. Morse. Lake Odessa; J. D. Bradfield, Portland.

Secretary-Treasurer—Dr. V. H. Kitson, Ionia.

Delegate to the State meeting—Dr. V. H. Kitson.

Alternate to the State meeting—Dr. C. B Grant.

Medico-Legal Committee—Dr. H. B. Knap.

JACKSON COUNTY

Jackson County Medical Society has just completed a most interesting and profitable experiment in medical post-graduate work. Dr. R. A. Cabot of Boston was secured to give a week of instruction at our hospitals and the work has more than exceeded our hopes. The work was clinical during the day's with an hour's talk in the evening. Clinical material was varied and abundant and nearly every doctor examined.

Patients personally received the directions of Dr Cabot. The undertaking was new to Dr. Cabot as well as the rest of us, but he expressed himself as delighted at the way it worked.

Dr. A. L. Lynst, Augusta Co., Stanton, published the number and variety of cases presented. Also saying he believed that a great deal of post graduate teaching in the future would be done in some such way. Dr. Cabot is a remarkable teacher and everyone felt that he was just the one to start such an undertaking.

It is our purpose to have one or two of these meetings each year. We learned of the scheme from a member of the Augusta Co., Va. Medical Society where the first meeting of the kind was held.

M. S. Vaughn, Secretary.

LAPEER COUNTY

The regular monthly meeting of the Lapeer County Medical Society was held at Dryden on Tuesday. Oct. 10 and proved to be one of the most instructive meetings that we have ever had.

We were all surprised at the large attendance and hope that the good work keeps up for it sure makes the meetings more enjoyable and entertaining in every respect.

Dr. R. E. Mercer of Detroit gave a very instructive talk on the early diagnosis of Tuberculosis which brought forth many discussions, but the whole subject was handled well and taught many of us how to recognize the earlier symptoms of the "White Plague."

After his paper a general discussion of the Compensation law, and Fee Schedules was taken up individually by the members of the Society which finally resulted in adopting a new schedule to read as follows:

Day Calls, inside the corporation	$ 1.50
Night Calls, inside the corporation	2.00
Mileage for county calls additional	.50
Confinement cases with call or no extra call	15.00
Instrumental cases	25.00

The above prices were adopted as minimum prices only so that a man may charge more if he so desires.

After getting this matter settled the meeting adjourned and the members were taken to the hotel for a light refreshment furnished by Drs. Parker and Braidwood of Dryden. The next meeting will be held at Lum on Nov. 7 and a good attendance is desired.

MARQUETTE-ALGER COUNTY

The program was different from our usual program, there being no papers. Every member was in advance requested to report either a resumé of some interesting and practical article that he had read in the medical literature, or report some features of interest in his daily practice. The free response to this request made this meeting a highly successful one.

Dr. A. W. Hornbogen exhibited a speciment of a spindle celled sarcoma of the spermatic cord. Interest in this was due largely to the rarety of the condition in this tissue; also reviewed a case of hyperplasia of lymp glands under the right pectoral muscles. He stated that he had removed a quart of them, that the case at first sight appeared to be malignancy of the right breast.

Dr. O'Brien reported a case of hypertrophy of the prostate gland with three strictures of the urethra, through which it was impossible to pass even a filiform boughie, until the patient was brought under anesthesia.

Dr. Burke reported a case of acute appendicitis in a man 68 years of age. This was interesting because reports from large clinics report only having one case of acute appendicitis after a long experience in a person as old as 65 years of age.

Dr. Wilson reported a case of acute appendicitis in which the patient at first refused operation, and after delay was operated; condition present was found to be a large amount of very thin liquid pus indicating streptococcus infection.

Dr. A. W. Hornbogen reviewed the literature and his experience of a year with McDonald's solution, considering it much superior in the preparation of patient's and surgeon's hands to the iodine solution.

Also reported the superiority in his opinion of Daken-Carrel Solution instead of boric acid solution wherever wet dressings are indicated.

Dr. Barnett reported, in addition to his voluminus obstetrical record previously reported at former meeting, his attendance of a woman in sixteen consecutive labours; and also four women who gave birth to twelve children in forty-seven months.

Dr. Wilson reported a case of quick action of pituitrin, the child being born in twenty minutes after the pituitrin was given, it being given when

cervix was dilated to the size of a silver dollar.

Dr. O'Brien reported a woman in labour to whom he gave pituitrin. The woman soon after went to sleep and slept nine hours.

Dr. Shelden is of the opinion that pituitrin in Dr. O'Brien's case was reported defective. He cited cases from his own experience of the vaccination of children with negative results, followed by small pox. Later the vaccine was admitted by producer to be a defective lot.

Dr. Main was called upon by the acting President to report a supposed case of infantile paralysis in Marquette, the child developing gastrointestinal symptoms, around the second day the temperature being 100 and some tenths degrees, the child dragging one foot, no response of muscles to farratic current, etc. Doctor does not know whether paralysis has continued or not, not having seen the patient since. There seems to be a reasonable doubt of the diagnosis of this case.

Dr. Bottum reports a patient fifteen months old having 100 degrees of fever, gastrointestinal symptoms, stiff neck, right leg flexed, which still remains so. Doctor did not commit himself as to the final diagnosis in this case.

Dr. Van Riper raised the question of whether these sporatic cases of anterior poliomyelitis were not in some instances lesions of anterior horn of the cord other than specific infections, he and Dr. Scholtes both reciting history of cases where there had been a lesion of cord apparently and permanent paralysis, one case of both legs, after the history of going in swimming when body was heated.

Meeting adourned to very welcome and tasty refreshments served by Ishpeming's new restaurant in a dining hall in the same building.

H. T. CARRIEL, Secretary.

MONROE COUNTY

The twenty-first annual meeting of this Society was held at the Monroe Club on Thursday, October 19, 1916, at 2:15 p. m.

Paper by Dr. Sisung, Title "Focal Infections."

Paper by Dr. Acker, Title "Infant Colic."

Paper by Dr. Noble, Title not announced.

Election of officers. Annual dues of $4.50 payable at this meeting. It is the duty of all physicians to attend these meetings. They owe it to their patients.

CHAS. T. SOUTHWORTH, Secretary.

MUSKEGON-OCEANA COUNTY

The last regular meeting of the Muskegon-Oceana County Medical Society was held September 22, 1916, at Pen Bryn Hotel, North Muskegon, Mich., with an attendance of forty, including guests. After dinner Dr. F. B. Barshal of Muskegon read a paper on "Pathology of the Thyroid" which was followed by a general discussion. Dr. R. W. Chivers of Jackson read a very interesting paper on "Vaccines," the discussion of which occupied the remainder of the time for the meeting. The meeting was in charge of Dr. Marshall and Dr. R. G. Olson of Muskegon Heights, Mich. Dr. Olson was to present a paper on "Gastric Hemorrhage" but owing to the lateness of the hour his paper was postponed to the next meeting. The society has been having a series of successful and instructive meetings every two weeks during the summer. Dr. W. L. Griffin having entertained the members at his summer home at Shelby, on July 14, and a good meeting having been held at Montague on August 25, in "get-together" fashion. On September 8 a meeting was held at Murrays Inn on Sylvan Beach at which Dr. C. F. Smith of Whitehall read a paper on "Diagnosis" and Dr. G. L. LeFevre of Muskegon presented "Dermoid Cysts."

C. J. BLOOM, Secretary.

WAYNE COUNTY

General meeting of Wayne County Medical Society was held Oct. 16, 1916.

After a well attended dinner given by the members of the Medical Reserve Corps the following papers on Medical Preparedness were read before the Society.

(1) Medical Military Preparedness.
Dr. L. J. Hirschman.

(2) The Medical Service at Grayling.
Dr. P. M. Hickey.

(3) Medical Training at Plattsburg.
Dr. T. N. Torrey.

(4) Medical Service on the Border.
Dr. J. W. Vaughan.

The final report of the Finance Committee for the A.M.A. was read and it was found that there had been ample funds, and that 55 per cent. of the subscriptions by members of the Society could be refunded. Every subscription had been paid in full.

A motion was made to take from the table a resolution favoring State Wide Prohibition which was carried after a warm debate. The original resolution, laid on the table at the last meeting was carried by a vote of 134 to 31.

OFFICERS AND COMMITTEES FOR 1916-1917

President—Dr. J. A. MacMillan
938 David Whitney Building Cherry 4844.

Vice-President—Dr. C. D. Brooks,
641 David Whitney Building Cherry 694

Secretary—Dr. H. R. Carstens,
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Chairman Surgical Section—

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1337 David Whitney Building Main 1090

Chairman Medical Section—

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73 Cass Avenue Main 590

Secretary Medical Section—

Dr. A. B. Henderson,
1668 Mack Avenue Ridge 4671-J

Club House Committee—

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Dr. R. S. Rowland,
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Dr. F. N. Blanchard,
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Dr. A. E. Catherwood,
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Dr. J. N. E. Brown (4 years),
Henry Ford Hospital Market 6500

Dr. C. H. Oakman (3 years),
1247 David Whitney Building Main 1742

Dr. Richard E. Mercer (5 years),
1229 David Whitney Building Cherry 1120

Dr. Homer E. Safford (1 year),
1541 David Whitney Building Cherry 2779

Medical Ethics—

Dr. Wm. M. Donald, Chairman,
979 Jefferson Avenue, E. East 1480

Dr. Wm. J. Stapleton, Jr.,
176 Lafayette Avenue Main 3040

Dr. C. Hollister Judd,
1229 David Whitney Building Cherry 1120

Dr. H. N. Torrey,
1033-9 David Whitney Building Cherry 1551

Dr. George C. Chene,
938 David Whitney Building Cherry 4844

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Dr. A. D. LaFerte,
1551-7 David Whitney Building Main 710

Dr. W. E. Keane,
101 Fort Street, West Main 126

Dr. Edward W. Mooney,
402 Fine Arts Building Main 4959

Dr. J. H. Boulter,
629-635 David Whitney Building Main 409

Publications Committee—

Dr. Wesley Taylor,
Editor of Bulletin,
1541 David Whitney Building Main 89

Dr. Ward F. Seeley,
Associate Editor Bulletin,
Tenth Floor Kresge Building ..Cadillac 581

Dr. Wm. C. Lawrence,
Business Manager Bulletin,
513 David Whitney Building Main 4898

Dr. Herbert M. Rich,
Chairman Program Committee,
1337 David Whitney Building Main 1090

Necrology Committee—

Dr. Augustus W. Ives, Chairman,
1229-1244 David Withney Building, Ch. 1120

Dr. W. R. Chittick,
507 David Whitney Building Main 325

Dr. Samuel Bell,
508 David Whitney Building Cherry 3149

Membership Committee—

Dr. C. L. Candler, Chairman,
1108 Kresge Building Cadillac 4983

Dr. Hugh Harrison,
240 Moran Ridge 336

Dr. Wm. Kennedy,
410 Washington Arcade Main 1472

Dr. B. H. Larsson,
Tenth Floor Kresge Building ..Cadillac 581

Dr. James A. McVeigh,
919 J. H. Smith Building Cherry 2121

Public Health Committee—

Dr. J. V. White, Chairman,
938 David Whitney Building Cherry 4844

Dr. V. C. Vaughan,
Tenth Floor Kresge Building Cadillac 581

Dr. Francis Duffield,
613 David Whitney Building Main 3722

Dr. W. H. Price,
Board of Health Office Cherry 2810

Dr. R. A. C. Wollenberg,
938 David Whitney Building Cherry 4844

Nurses' Committee—

Dr. Walter Manton, Chairman,
601 Shurly Building Main 4682

Dr. W. D. Barrett,
641 David Whitney Building Cherry 694

Dr. Wm. Applebe,
707-11 David Whitney Building ..Main 2912

Dr. Hermon H. Sanderson,
1337 David Whitney Building Main 1090
Dr. Gilbert J. Anderson,
419 Pennsylvania Avenue Hickory 593

Cancer Committee—

Dr. James D. Matthews,
952 David Whitney Building Main 777
Dr. Jos. H. Andries,
902 David Whitney Building ..Cadillac 2090
Dr. Max Ballin,
357 Woodward (cor. High) Main 3593

Program Committee—

Dr. Herbert M. Rich, Chairman
1337 David Whitney Building Main 1090
Dr. Jos. H. Andries,
902 David Whitney Building Cadillac 2090
Dr. A. E. Catherwood,
1337 David Whitney Building Main 1090
Dr. Theo. A. McGraw, Jr.
73 Cass Avenue Main 590
Dr. A. B. Henderson,
1668 Mack Avenue Ridge 4671-J

ADDRESS OF THE RETIRING PRESIDENT.

Members of the Wayne County Medical Society:

This meeting brings to a close one of the busiest, most prosperous and successful years of this society.

You have been notified of its activities from week to week through the Bulletin, which, by the way, has, during the past year, taken on the form and appearance of a creditable medical magazine.

Regular meetings have been held on Monday evenings without exception. The Program Committee gave you a most varied and interesting array of subjects and talent. Not only were internal medicine and general surgery represented in many phases but every speciality was as well. Special programs were also arranged bearing on public health, tuberculosis, the cancer problem and the financial side of medical practice.

It was our successful endeavor to enlist the interest of as many members as possible in the literary pursuits of the society. We had also the pleasure and honor of seeing and being addressed by several physicians and surgeons of repute from other states. Once the Society accepted an invitation to visit the Toledo Academy of Medicine and on another occasion we entertained that society.

The large and eminently successful meeting of the American Medical Association in our city last June, at the instance of this society, was of so recent occurrence that it is still fresh in our minds. The Detroit medical profession did their full duty in promoting that meeting and in entertaining their guests. The profession and laity willingly contributed several thousand dollars for those purposes and will be interested to be informed how they were expended.

The Wayne County Medical Society showed activities last year in other ways than its meetings. It did many things through committees.

For instance the Library Committee, not overcome by the chaotic condition of the library, and the inability of your Trustees to furnish any considerable financial help, went out among their friends and brought back three thousand dollars, with which they have put your library in good order. The services of preceding library committees are not berated, but the results of last year's library committee were invaluable in making the large collection of books available for research or reference. During the past year the idea originated and developed of making the personnel of the Library Committee more permanent by longer appointments. To effect that the by-laws were amended to provide for the appointment each year of one new member to serve five years, the remaining four to hold over. That change will undoubtedly inure to the upbuilding of the library and lead in the near future to a substantial endowment for its permanent support.

The Entertainment Committee had no easy task to equal the precedents set in previous years. They did creditable work however as your evident satisfaction with their two parties showed. Incidentally they contrived to put several hundred dollars into your treasury.

The work of the Public Health Committee last year deserves particular notice. The special program, arranged under its auspices, has already been mentioned. In addition the chairman of the committee succeeded in carrying on an extensive campaign of education through the city in conjunction with the "movies." It was a unique method of prosecuting public health and placed the society in the fore-ground as an angency for the public good.

With the concurrence of the Council four extra committees were appointed last year. One of those was the Membership Committee. That committee, under the chairmanship of Fred N. Blanchard, conducted a city-wide campaign and adde 158 to our list of members.

Previous to last year the Council undertook to investigate cases of doubtful membership and to try members who had been charged with unethical conduct. It is needless to say that that method was unsatisfactory. Accordingly an Ethics Committee was appointed, to which were referred a number of such cases. Results have shown the advantage of a small committee for that particular business. Its principle of action, to enlarge and conserve our membership as much as could be done in justice to the individual as well as to the profession, was, in my opinion, the correct principle to follow. The continuance of that committee is strongly advised.

We have lost several members by death during the last year. The Necrology Committee was unusually faithful in recording them and publishing suitable encomiums.

A new standing committee was appointed last year to study the cancer problem and to promote the fight against that dread disease. One public meeting was held and some propagandism started. A beginning of the crusade has been made locally and the committee may be trusted to lead the van.

As most of you knew the society had a debt at the beginning of last year amounting to approximately $16,000.00. During the year a concerted effort was made to reduce it. A committee made up of all officers and other committeemen canvassed the entire list of members who had not subscribed toward the building fund hitherto, and five thou-

sand dollars were raised. There are still many members who have not done their utmost or even their share in the financial support of our Society Home. Succeeding regimes should continue that work until a sustaining endowment shall have been secured. In the meantime a slight increase in our annual dues would largely increase the income of the Society without entailing a burden on any one.

In conclusion I thank especially all officers and committeemen for their generous and heary co-operation in forwarding the interests of the society during my presidency. I accepted the office as a duty and in the performance of it I found pleasure.

I thank you all.

Frank B. Walker.

ANNUAL REPORT OF THE SECRETARY, 1915-1916.

September 18, 1916.

As the work of our Society is so largely done by Committees, it is difficult for the Secretary to make a report which will not encroach upon the reports of the Committee Chairmen.

With proper apologies, then, to any whose thunder I am stealing, let me begin by reporting a membership at the present time of 831 Active and 73 Associate, as compared with 673 Active and 72 Associate a year ago. Any comment on this I will leave for our Membership Committee to make, and only thank them for their excellent showing.

Though our gain in membership has been so striking, the attendance at the meetings has not been up to the standard, averaging ninety-two, as compared with 120 of last year. Are we becoming too busy professionally, or is there a growing indifference to the value of our Scientific Meetings? Probably one reason lies in the fact that local men have figured much more largely in our programs this year than last. The spectacle of the prophet unhonored at home repeats itself. Perhaps, then, a falling off in attendance was to be expected, although I assure the Program Committee that no apologies are due from them.

During the past year death has removed nine of our Active Members, a larger number than in any previous year. One Member and Ten Associate Members were automatically dropped from Membership in January for non-payment of dues, as provided in our By-Laws. Of this number, six have again made application for Membership and have been received.

One distinct advance made this year was in the appointment of an Ethics Committee. Their conscientious work has been of great aid to the Council in determining the fitness of candidates for Membership. Your Secretary feels a pardonable satisfaction in this Committee since his Annual Report of last September urged its appointment. Of the operation of the Committee, its Chairman will speak for himself.

As Secretary of the Council, I have to report a total of twenty-two meetings. Committee Chairmen have met with us at some of these meetings and so enabled the Council to keep in touch with the Society's varied activities.

The duty of passing on applicants for Membership has been considerably lightened by the work of the Ethics Committee, though the Council has made it a practice to have definite knowledge about each candidate. In this the Secretary of the State Board of Registration has given us much assistance.

Two applicants have been denied membership; and one postponed for six months.

Two members of the Society have been asked to appear before the Council to explain accusations regarding their conduct.

In place of the usual concluding recommendations, let me urge upon each member of the Wayne County Medical Society a realization of his own responsibility and privileges. Our Library and Weekly Meetings offer opportunities which few Societies can present. Let us use them to their fullest extent.

Respectfully submitted,

C. E. Simpson, Secretary.

REPORT OF LIBRARIAN.

Library Committee,

Gentlemen:

I beg to submit a report on the present condition of the library and some of its most pressing needs. The periodicals have been accessioned and arranged on the shelves. Most of the duplicate material has been sorted ready to be checked up with the original files. There are a large number of reports and transactions of various societies which have not been shelved. In order to shelve these in the same alphabet with the journals it will be necessary to get some new stacks to insert in the spaces between the stacks now standing. I would recommend that eight stacks be bought at an early date. Although we have a large amount of duplicate material, the disposal of it will not necessarily afford us much additional stack space. As we hope to exchange as much as possible with other libraries this will mean that we will have to reserve space for books to be obtained in that way.

At present the library is receiving about twenty more journals than there are pigeon holes to receive them. If the shelves on which the indexes and encyclopedias now stand were to be divided into pigeon holes we would have adequate space for some time; however, it would be necessary to have additional space furnished for the reference books. Shelves might be built and placed on the opposite side of the reading room.

With two assistants, preferably experienced catalogers, and a boy for heavy work, carrying books and the like, I believe the library could be put into a presentable condition by June. We could probably have all the books accessioned, classified, labelled and properly arranged on the shelves, with a large number of cards in the cabinet. The work of cataloging the library would be greatly facilitated, if printed cards from the Library of Congress and the John Crerar Library were to be obtained. There are between 15,000 and 20,000 books in the library to be cataloged. It would take a number of years to type cards for these books, that is, if books are to be entered under author, subject and title, with the necessary cross references. Even with the printed cards there is much typing to be done. The call numbers and subject headings must be typed on the cards. Cross references must be made by

hand; and often it is necessary to make added entry cards.

I have made the following estimate on the cost of buying stacks, procuring assistants, buying cards, etc.. I have found a voucher, dated December 18, 1913, made in favor of the Art Metal Construction Company, of Jamestown, N. Y., for stack equipment amounting to $1,350.00. I have written that company for quotation of prices.

8 stacks at $100 per stack	$800.00
2 catalogers for 3 months at $70 per month	420.00
1 young man at $50	150.00
Printed cards for the catalog with books of authorized subject headings	100.00
New shelves in reading room, etc.	100.00
One book truck	30.00
	$1,600.00

The cost of filling the gaps in our files can only be estimated at present. I believe that two thousand dollars for immediate needs would be a conservative estimate. With about thirty-five hundred dollars we can put the library into good running order by about June 1st.

Respectfully,
Ethel L. Goff, Librarian.

REPORT OF ENTERTAINMENT COMMITTEE.

September 18, 1916.

I herewith beg to submit the following report of the Entertainment Committee for the past fiscal year.

The net receipts from the Feather Party given November 20, 1915, were $163.87.

The expenses of the Goodfellowship Night given March 20, 1916, were $173.36. However, by means of the Spinning Jinney used that evening this was reduced by $123.50 to a net cost to the Society of $49.86.

The Entertainment Committee desires to thank the members of the Society for their hearty cooperation in these two social evenings which resulted in increasing the finances of the Society to the extent of $114.01.

Respectfully submitted,
George Chene.
Chairman of Entertainment Committee.

REPORT OF MEMBERSHIP COMMITTEE FOR YEAR ENDING MAY 30, 1916.

Active membership September 1, 1915, was 673, while on May 30 we had a membership of 831, showing a gain of 158.

The associate membership at the beginning of the year was 72 and at the end 73.

The membership contest held the first two weeks in April brought in 76 members and prizes were awarded to the following:

F. N. Blanchard—First prize, 19 members.

E. W. Mooney—Second prize, 5 members.

F. J. Kelly—Third prize, 4 members.

You will note that 50 per cent. of our new members secured during the year were obtained through the efforts of our two weeks campaign and shows what a little work will do, and I would suggest to my successor that we have a continuation of this very prosperous campaigning.

Respectfully submitted,
F. N. Blanchard,
Chairman Membership Committee.

TREASURER'S REPORT.

September 1, 1915, to August 31, 1916.

Mr. President and Members of the Wayne County Medical Society:

Gentlemen:—In submitting his Annual Report, your Treasurer has taken the liberty of representing graphically upon these charts the receipts and disbursements for the year ending August 31, 1916.

The tables, that you observe here, are more or less self-explanatory but still a few comments may be helpful in bringing out the more salient points of the report.

The receipts for the building fund were $3,745.00, from County Dues $4,052.00, and from State Dues collected at the same time and later turned over to the State Society, $2,283.00. The receipts from rentals of the Auditorium were $1,922.00 and the disbursements for it maintenance $948.71, leaving a gain of $973.29. The receipts from the Cafe, that is, from the sale of liquors and cigars, were $1,119.96. Disbursements were $1,156.18, or a loss of $36.22.

The Library was unusually fortunate during the last year and the amount of receipts for the Library was $1,863.31, of which nearly all was made up of subscriptions to a special library fund, details of which will no doubt be supplied by your Library Committee. The expense in maintaining the Library was $1,204.62, the major part of which was spent in the installation of new stacks and in cataloging the books. Receipts from the Bulletin were $1,369.00. Disbursements $1,483.30. Perhaps the Business Manager can tell us why the publication was run at a loss of $114.30. House rentals totaled $1,310.00 for the year from our permanent tenants. Your Treasurer received $138.55 for Auto Tags, and from miscellaneous sources $248.27. One hundred sixty-three dollars and eighty-seven cents came from the Keno Party last November. House maintenance cost the Society $2,579.81 during the last year. The State Society was paid $2,274.00 for its share of the dues collected. Meetings and entertainments cost $119.34. Miscellaneous items of expense amounted to $585.50, of which $166.15 was paid to defray the expense of the moving picture propaganda for tuberculosis, and $175.89 for printing the Constitution and By-Laws. Betterments was, on September 1, 1915, totaled $231.80 for the year. The amount of the mortgage was, on September 1, 1915, $16,000.00. Two payments were made on the principal of $2,000 and $3,000. leaving the amount of this indebtedness at $11,000.00. August 31, 1916. The interest paid was $825.00 for the year. The amount of the receipts over disbursements was $464.06 plus the amount on hand September 1, 1915, $2,523.73 equals $2,987.79, the balance in the bank. The amount collected by subscriptions to the Building Fund up to September 1, 1915, was $39,923.61 plus $3,745.00 collected last year, makes a grand total of $43,668.61, certainly an excellent showing for a little over six years of hard

work. The amount of unpaid subscriptions August 31, 1916, was $12,839.50.

It should be remembered that this is not a financial report but simply a statement or report of what has accrued between September 1, 1915, and August 31, 1916. A complete financial report will be made after January 1, 1917, when our fiscal year ends.

The thanks of your Treasurer are due Dr. Thaddeus Walker for his valuable assistance, also Mrs. Tice, our Office Secretary, and to Mr. C. A. Barnum, our Auditor, for their assistance in making up this report.

Respectfully submitted,

W. H. Morley, Treasurer.

RECEIPTS.

Sept. 1, 1915 to Aug. 31, 1916.

Building Fund	$ 3,745.00
County Dues	4,052.00
State Dues	2,283.00
Auditorium	1,922.00
Cafe	1,119.06
Library	1,863.31
Bulletin	1,369.00
House Rentals	1,310.00
Auto Tags	138.55
Miscellaneous Items	248.27
	$18,051.09

DISBURSEMENTS.

Sept. 1, 1915 to Aug. 31, 1916.

Auditorium Maintenance	$ 948.71
House Maintenance	2,579.81
Office Expense	1,178.71
Cafe	1,156.18
Bulletin	1,483.30
State Society	2,274.00
Library	1,204.62
Meetings and Entertainments	119.34
Miscellaneous	585.50
Betterments	231.80
Principal on Mortgage	5,000.00
Interest on Mortgage	825.00
Balance, September 1, 1916	464.06
	$18,051.09
Cash on Hand (bank balance) Sept. 1, 1915	$ 2,523.73
Balance for Year 1915-1916	464.06
Cash Balance (balance in bank) Sept. 1, 1916	$ 2,987.79

WAYNE COUNTY MEDICAL SOCIETY—ASSETS.

August 31, 1916.

Cash	$ 2,987.79
Land and Buildings	25,000.00
Auditorium	33,227.96
Library	12,000.00
Furniture and Fixtures	6,087.67
Petty Cash	15.15
Unpaid Subs. to Buldg. Fund	12,839.50
Membership Dues Unpaid	80.25
Prepaid Insurance	101.62
American Med. Assn.	18.10
Betterments	95.65
	$92,453.69

LIABILITIES.

Mortgage	$11,000.00
State Society	28.50
Defense League Fund	1,812.50
Life Membership End Fund	300.00
Membership Fund	1,260.64
Library Special Fund	1,349.97
Prepaid Dues	22.00
Accrued Interest	170.99
Surplus	76,371.19
Gain to Aug. $221.51	
Loss for Aug. 83.61	
Gain for Year	137.90
	$92,453.69

LOSS AND GAIN FOR AUGUST.

House Maintenance	$120.31
Auditorium Maintenance	62.16
Library	83.92
Cafe	273.58
Auto Tags	7.82
Office Expense	75.55
Interest	50.42
Insurance	3.67
	$677.43
House Rentals	$135.00
Auditorium Rentals	75.00
Library Subs., etc.	13.10
Cafe	26.00
Bulletin	23.50
Auto Tags	11.00
Miscellaneous Income	.05
1-12 of Annual Dues	315.17
Loss, August	83.61
	$677.43

LIBRARY RECEIPTS.

September, 1915, to Date.

Mr. Pitts (book)	$ 2.00
Detroit Oto-laryngological Society (Laryngoscope)	10.00
Dr. Kidner (Am. Jour. of Orthopedic Surg.)	3.00
Dr. Polozker (Med. Rev. of Rev.)	2.00
E. W. Mooney (Jour. of Infect. Disease)	5.00
P. F. Morse (Jr. of Pathology and Bacteriology)	5.50
F. B. Tibbals (N. Y. Med. Journal)	5.00
Don Campbell—a subscription	3.00
Dr. Ford (Archives of Pediatrics)	3.00
T. A. McGraw, Jr.—a subscription	4.00
R. E. Mercer (Journal of Laryngology)	5.00
Wm. H. Morley (Surg. Gyn. & Obst.)	15.00
Geo. Fay (Annals of Surgery)	5.00
F. T. F. Stephenson (Bost. M. & S. J.)	5.00
Angus McLean (J. of Cancer Research)	5.00
F. L. Newman (J. of Exper. Med.)	5.00
Det. Clin. Labor. (J. of Bio. Chem.)	9.00
Dr. Shawan (Sale of 6 Nos. Surg. Gyn. & Obs.)	1.25
Rollin Stevens (Bindery Fund)	12.85
Fines for over-due books	3.27
	$108.87

LIBRARY EXPENDITURES.

September, 1915, to Date.

Bindery	$ 24.05
Bindery	39.50
Bindery	13.30
Richmond and Backus	3.75
Sheehan (dictionary)	1.00
Sheehan (stamp)	.85
Drake	1.00
Richmond and Backus	1.00
Telegram	.30
Petty Cash	3.39
Petty Cash	.50
Petty Cash	2.02
Petty Cash	.92
O. C. Bright (buzzer)	1.90
A. M. A. (guide to current literature)	.75
Messenger	.50
Lib. of Congress, first of subject headings	5.40
J. of Exper. Medicine	15.00
Rockefeller Ins. of Med. Research	5.00
A. R. Elliott Pub. Co.	5.00
Stechert	15.56
Lippincott (International clinics)	2.00
Lippincott	2.00
J. of Infectious Dis.	5:10
Index Medicus	8.00
Laryngoscope	10.00
Am. J. Obstetrics	5.00
Am. J. of Orthopedic S.	3.00
Annals of Surgery	5.00
Bost. M. & S. J.	5.00
J. of Cancer Research	5.00
J. of Laryngology	5.00
J. of Pathology	5.50
Laryngoscope	10.00
Med. Rev. of Rev.	2.00
N. Y. Med. Journal	5.00
Surg. Gyn. & Obst.	15.00
J. of Bio. Chem.	9.00
Med. Lib. Exchange	10.00
Remington Typewriter Co.	.75
Petty Cash	3.65
Petty Cash	.90
Petty Cash	.71
Petty Cash	1.25
Galbraith (Allbutt diseases of the Arteries)	8.10
	$267.67
Salary of Librarian—Oct. 29 to June 30	$405.75

SPECIAL LIBRARY FUND RECEIVED.

C. E. Simpson	$ 10.00
R. E. Mercer	10.00
J. N. E. Brown	10.00
C. H. Oakman	10.00
R. C. Jamieson	10.00
H. Wilson	10.00
F. B. Walker	10.00
Louise Ralph Burt	25.00
W. R. Chittick	10.00
R. A. Newman	100.00
David Whitney	700.00
H. N. Torrey	100.00
Robt. Oakman	500.00
R. H. Webber	100.00
H. Safford	10.00
S. S. Kresge Co.	100.00
	$1,715.00

EXPENDITURES.

Stacks	$ 877.34
Book Truck	30.00
Cutter-Sanborn Tables	2.50
Royal Typewriter	41.00
File Box	1.10
Catalog Supplies	10.00
John Crerar Library	10.00
Bindery	22.95
Salaries (C. Hawes, F. Quinlan and R. Goff)	231.78
Petty Cash	.30
Electric Fixtures for Stack Room	68.85
	$1,295.82

Donations of books or back numbers of journals have been made by the following, during the year:

Casey A. Wood, Chicago; Geo. Duffield, H. W. Longyear, H. L. Begle, Andrew Biddle, L. Breisacher, W. P. Manton, W. H. Morley, Ray Connor, W. M. Donald, Henry Carstens, J. H. Carstens, C. D. Aaron, Eugene Smith, J. E. Emerson, C. W. Hitchcock, R. H. Stevens, Wm. Harvey Estate, R. G. Owen, C. G. Jennings, E. T. Milligan, A. Lappner, Herbert Rich, R. K. Johnson, S. Minor, L. Slominski, Tom Williams, Washington, D.C.; Noah Aronstam, Bayard Holmes, Chicago.

The following have either sent in subscriptions to publishers for the library or are giving their personal copies to the library:

Drs. Thaddeus Walker, R. C. Jamieson, Kidner, Morley, Detroit Ophthal. and Oto. Club, Drs. Mercer, A. D. Holmes, W. P. Manton, J. N. E. Brown, Carstens, Haas, Matthews, Det. Clinical Lab., Drs. W. J. Wilson, Hirschman, Dempster, Biddle, Delos Parker, A. M. A., Drs. P. M. Hickey, R. H. Stevens, Houghton, C. D. Aaron, J. E. Emerson, Ives.

Seven hundred volumes of books and journals have been given the library. Nine hundred and fifty unbound numbers of journals. One hundred and thirteen journals are regularly received in the library. Forty-two bound volumes of various periodicals and seventy-two numbers have been received from the library exchange to fill gaps in our files. We have sent away about twice as many from our duplicates, for which we will receive additional volumes from the exchange.

During the year the books in the library have been classified by subjects and the periodicals have been arranged alphabetically. The librarian is working on the card catalog which is far from complete.

REPORT OF PROGRAM COMMITTEE.

Gentlemen: I herewith present to you my report of the program committee for the year 1915-16. We have had all the dates filled, comprising thirty-two meetings in all. The attendance has been good and on the whole enthusiastic.

Your committee endeavored at the outset to secure for as many members of the society as possible the privilege of reading a paper or of entering into discussion. Fifty papers in all were presented. Of these thirteen were from prominent members of the medical and surgical profession of other cities, and without assuming undue credit, the Wayne County Medical Society listened to several men the past

year who were unsurpassed in their particular field of work.

Forty-seven papers were by members of our own society. Without exception, they showed careful preparation and were read to appreciative audiences. One clinical evening was held in which the program consisted of the presentation of cases with their histories. One night was devoted to the medico-legal phase of the society. The medico-legal evening has become almost an established custom, which it would do well for future program committees to observe.

An innovation was held on October 18 in the way of a meeting devoted to the business side of medicine. The program consisted of a symposium dealing with legal pointers, book-keeping, collections and credit problems.

If the experience of your retiring chairman of this committee is of any value to future chairmen, we might add the following suggestions: First —shorter papers; adhere to the fifteen or it may be twenty minute limit. The temptation is for the writer to go into his subject exhaustively. Inasmuch, however, as all the papers read before this society find their way, sooner or later, into the various medical periodicals, it is the belief of your chairman, that such papers could be confined to within the prescribed time by abstracting the less important portions and publishing them in extenso in the medical journals. The interest of the Society can be better sustained by short papers, well written and more of them. I believe, also, that if those called upon to discuss papers were given some idea of the subject matter in advance of the evening, on which the paper was to be read, that the discussions would be more valuable than the extemporaneous efforts to which we are accustomed.

All the men approached from out of town responded readily, there being no refusals whatsoever. It is the writer's experience that members of the society should have their papers ready for presentation early in the society year. There is a dearth of papers during the fall, whereas, during the spring, one is taxed for space on the program to accommodate the applicants.

Respectfully submitted,

J. H. Dempster.

REPORT OF LIBRARY COMMITTEE.

September 11, 1916.

To the President and Members of the Wayne County Medical Society:

Gentlemen:—

Your Library Committee has the honor to submit the following report for the past year.

In beginning the work, last year, it was found that the library had a good many books piled on the floor for lack of shelf room, and that there was not an adequate system of cataloging. It was decided that we must have new library stacks, a proper catalog and the library put into usable shape, if it was to be of any value to our members.

The first thing necessary was a trained librarian to give all her time to the library and on our request the Board of Trustees engaged the present librarian. We then asked her to make out a report of the condition of the library and its most immediate necessities. A copy of her report at that time is here appended, also a complete report, to the end of the year.

The most immediate necessity was of course—money. This we proceeded to get by subscription and had no great difficulty in raising $2,415.00, $1,715.00 of which has been paid in. $700.00 is still owing. We needed to raise, according to her report, $3,500.00, which still leaves us needing about $1,000, to keep on with the work as outlined.

We have spent out of this special fund:

For stacks	$877.34
Book truck	30.00
Cutter-Sanborn tables	2.50
Royal Typewriter (in exchange)	41.00
File box	1.10
Catalog supplies	10.00
John Crerar Library	10.00
Bindery	22.95
Salaries (C. Hawes, F. Quinlan, E. Goff)	231.78
Petty cash	.30
Electric fixtures for Stack Rooms	68.85

making a total of $1,295.82 and leaving a balance of cash on hand of $419.18 which with the $700.00 to be paid in will leave us a cash balance of $1,119.18 to begin the new year.

Last year we secured subscriptions from various members for medical journals, as many of you know, to the amount of $92.75, besides copies of journals given by the members. This is an item it is hope may be eliminated, as it will probably be possible to subscribe for them without asking individuals.

The special Library Fund does not include the regular expenses of the library which are paid out of the general fund, by the Board of Trustees and which will appear in the general report.

In order to further the work of the Committee, it was deemed best to make it larger and at its request, the President appointed five additional members, who have worked loyally and well. To make the Library Committee more of a permanent body, an amendment to the Constitution was offered and passed, that in the future will give the President the appointment of one new member each year, leaving the other four in office. When deemed best, the Library Committee is empowered to request the appointment of further members to help in the work.

As to the present condition of the library, the books are all arranged and cataloged, so that our Librarian can find any book on the shelf, whenever requested and such books as we have not in stock, she can obtain from the Surgeon Generals and other libraries, with which we are affiliated, for any member, within a reasonable time and on payment of the small sum necessary for postage.

We hope that during the next year you will show sufficient interest in your library by using its facilities and so encourage the Committee in working out further plans for its advancement.

Respectfully submitted,

R. E. Mercer, Chairman.

REPORT OF COMMITTEE ON ETHICS.

The Committee on Ethics begs herewith to present its report for the past year. Originated late in the year, for the purpose of easing the burdens thrown upon the Council in their selection or rejection of applicants for membership in the Society, the large amount of work which the Committee has done during the comparatively short period of its existence would indicate the great necessity for its being.

All applications for membership coming to the Council, in which any question has been raised as to the eligibility or desirability of the applicants, have been referred to this Committee. In a number of cases the committee has found that it could at once remove any onus from the names presented and could promptly pass them with a recommendation for acceptance by the Council. In a goodly number of other cases, however, where certain charges of a comparatively grave nature have been instituted, it was found desirable to hold several meetings of the committee, and in certain cases to request the presence of the applicant at such meeting, where he could be heard in his own defence. It was deemed fair in practically every case to permit a man to have a hearing before he was rejected as a member. The Committee has endeavored honestly and fairly to weigh every case and to take into consideration all the factors surrounding the charges which might cloud a man's reputation. In the case of certain gentlemen of foreign extraction, it was found that their views in regard to advertising were sadly tinged with European pigments and were painted from the European point of view. A frank interview with these gentlemen, and a frank statement as to the habits and customs of this country, in several cases, led to promises of improvement in their advertising methods. So far as we have been able thus far to discover, these gentlemen have lived up to their promises. In a large society, such as the Wayne County Medical Society, where a sincere effort is made to secure as members every reputable physician in the county, it will be readily understood that many men of uncertain antecedents and of somewhat equivocal training, both socially and medically, will be secured. These men are apt to do things innocently enough, which are not quite in accord with the highest standards of modern American medical practice. Their intent, however, is honest, and their desire to meet the demands of the society is perfectly sincere. In these cases, the Committee has endeavored to conduct a small educational campaign, and it believes with considerable success. In other cases, men of a somewhat elastic conscience, feeling that they were not under any surveillance, have been reported as doing things which would not stand the pitless glare of publicity. When these men have come before the Society with their application for membership, the committee has endeavored to make them understand that the unified eye of the Society was upon them, and that they must in the future be good. Here, again, the committee has endeavored to institute a small educational campaign.

In this connection it might be pertinent to suggest that future committees on Ethics be endowed with a continuance of disciplinary and educational power, so that any member found transgressing in any way the ethical standards of the society could be promptly haled before it, lectured upon his misdemeanors, castigated for his crimes, and made to understand that a perpeutation of his ignominies would necessitate the severance of the bonds uniting him with the society. Your committee does not believe that any future committee is looking for an additional burden of work, but it feels that the Ethics Committee of the Society should be made quite worth while, and that it should be an Ethic Committee dealing not alone with the prospective members, but with any actual member who goes wrong. We want a big society, but we want a clean society. We do not want to throw men out of the society, but we want them to live straight while they are members of it. Your committee, hence, feels that if it had the power of summoning before it members accused of obnoxious practices, it could retain them as members while inducing them to refrain from a continuance in said practices.

The committee has had submitted to it matters involving not only the ethics of the profession in the widest view of ethics, but also questions involving contract practice, the payment of debts, the personality of a man towards his neighbor, fees, fee-splitting, birth, control, and criminal malpractice. It is thus evident that the work has covered a wide and interesting range of subjects. In some cases, it has been felt that the subjects assigned to it for discussion and settlement were quite without the scope of the committee, but inasmuch as some one had to settle them, and inasmuch as a small committee could do much better work along certain of these lines than a large body like the Council, the Ethics Committee manfully tackled everything sent to it, and did the best it could. It has endeavored to be fair, and firm, while being displomatic. All matters which have been referred to it have been discussed promptly, and a recommendation sent to the Council within a week, if possible. In this way it has endeavored to expedite the work of the Membership Committee and of the Council of the Society.

Respectfully submitted,

W. M. Donald, Chairman.

REPORT OF COMMITTEE ON NURSING.

The fiscal year of the Wayne County Nurses' Association has been a satisfactory one, there having been calls for 5,476 nurses, though only 4,229 of these calls could be supplied, as 156 calls were cancelled. There were 1,091 calls that could not be supplied because of shortage of nurses. There were also calls for 548 practical nurses who were not always available; this an increase of about 25 per cent. in the number of nurses called, and about 65

per cent. increase in the number of calls not filled. This increase is partially explained by the epidemic of influenza last fall, but probably much more by the rapid growth of Greater Detroit, so rapid that the demand for labor, both skilled and unskilled, has exceeded the supply.

It can be said, however, that enquiry reveals the fact that this shortage in the supply of nurses is well nigh universal in all the cities of the U. S., though not to the extent found in Detroit.

This great growth in population and prosperity, especially this inequality in supply and demand has worked hardship to the middle classes, and has rendered the working classes more independent which fact may explain the reason for the complaint from some physicians that nurses are too particular and will not go where sent. On their application blank, nurses are asked: "Will you nurse the following diseases: Medical, surgical, obstetrical, children, nervous, insane, contagious and infectious?" If physically or temperamentally, they feel themselves not adapted to certain lines of work, they say so and are not supposed to be subject to call on such cases. So the question asked the doctors as to the nature of the case which some refuse to answer, is not asked out of curiosity, but to aid in sending the proper nurse to the case, and is felt to be legitimate.

The W. C. N. A. whilst recognizing as do we all, that the price of a trained nurse is prohibitive to many moderately well-to-do families, therefore register the so-called practical nurse, with rates from $8 to $15 a week. While a great many women apply for such registration, many have no experience or knowledge necessary and comparatively few are accepted. The W. C. N. A. claims, however, that many physicians use so-called practical nurses, not listed with the association who are being paid graduate nurses fees, which is an injustice to all concerned.

To quote: "We believe that if the members of the W. C. M. S. would more generously co-operate with efforts of the W. C. N. A. in placing women desiring to do nursing in homes, for the wage they are qualified to earn, this matter of cheap nurses would be more quickly adjusted." Many are now employed, whom our examination has shown to be ignorant and dangerous, charging high and not in any manner filling the need." It is felt that it is not to the best interests of the patient, the physician and the nurse, if the members of the W. C. M. S. would try always to obtain their nurses, graduate and undergraduate, through their bureau.

A. W. Ives, Chairman.

DON'T FAIL
TO ATTEND YOUR
NEXT MEETING.

Book Reviews

BACTERIOLOGY, GENERAL, PATHOLOGICAL AND INTESTINAL. By Arthur I. Kendall, B.S., Ph.D., Dr. P.H., Professor of Bacteriology in the Northwestern University Medical School, Chicago, Ill. Octavo, 651 pages, with 98 engravings and 9 colored plates. Cloth, $4.50 net. Lea & Fehiger, Publishers, Philadelphia and New York, 1916.

This work covers fully the advances of bacteriology along the lines of morphology, staining and diagnosis, and the preparation and use of cultural media. It gives attention, moreover, to the problems of immnulogy as related to the chemistry of bacterial activity, which subject is presented in concrete and concise form, indicating the relation of the chemistry of bacterial activity to the biology of the bacteria The relation of the chemistry of bacterial nutrition to the study of intestinal bacteriology in health and disease is clearly set forth in the author's chapter on intestinal bacteria. Throughout the work emphasis is laid on what the bacteria do rather than on what they are, since interest naturally is centered in the host rather than in the parasite.

Concise statement, clear expression and the elimination of theoretical considerations in favor of essentials are characteristics of this work, and its usefulness will impress itself more and more on the practitioner or student as he avails himself of its guidance. Every step in every process is made clear. The details of laboratory equipment, the minutiae of laboratory technic, and the use and value of apparatus receive careful attention.

Historical notes stimulate interest in the study, and aid in the comprehension of the subject by showing the steps in the development of modern bacteriology. The author's emphasis on the applications of bacteriology in etiology and preventive medicine is a point of value. The sections dealing with the physiological functions of bacteria are most enlightening, and the lastest knowledge of complement fixation, hemolysis and the reactions of immunity is adequately presented.

This work is a thorough scientific and completely modern presentation of the proven and useful in its field.

THE AMERICAN YEAR-BOOK OF ANESTHESIA AND ANALGESIA. F. H. McMechan, M.D., Editor. Cloth, 415 pages, many illustrations. Price $4.00. Surgery Publishing Company, 92 William St., New York.

This is the first attempt to collate the year's progress in anesthesia and analgesia. The task has been performed by a corp of experts in such a manner that the volume will appeal to the individual and collective needs of the surgeon, dentists, specialists, anesthetists and researeh workers.

The volume is composed of exhaustive articles and are not mere paragraph excerpts. It so becomes a volume of authoritative reference. As such it is indeed a valuable addition to our literature.

THE TREATMENT OF DIABETES MELLITUS, WITH OBSERVATIONS UPON THE DISEASE BASED UPON ONE THOUSAND CASES. By Elliott P. Joslin, M.D., Assistant

Professor of Medicine, Harvard Medical School; Consulting Physician, Boston City Hospital; Collaborator to the Nutrition Laboratory of the Carnegie Institution of Washington, in Boston. Octavo, 440 pages, illustrated. Cloth, $4.50 net. Lea & Febiger, Publishers, Philadelphia and New York, 1916.

The new treatment of Diabetes—the Allen treatment—by means of fasting, and the importance of physical exercise for diabetic patients, are fully discussed in this work. Fasting is in itself a distinct advance, but the practical simplification of treatment which it entails is an almost greater advantage.

Oddly enough, with the completion of this book came the completion of the author's first thousand cases treated in private practice. The book contains the results of his experience with these cases and is written for the general practitioner. Incidentally, it contains nothing which diabetic patients may not read with profit, and it will be found a useful book to place in their hands.

Complications of diabetes are described along with their treatment, thus saving repetition and showing the doctor how to handle each complication when it develops. The hopeful tone which the author's experience has enabled him to assume regarding such complications as tuberculosis, arteriosclerosis, and gangrene will be found most encouraging. The section on surgery will enable the surgeon to operate on diabetic patients without sending them into coma.

Under aids in the practical management of diabetes cases the author gives a list of things every patient should know, complete directions for nurses, history charts and dietary and urinary records now successfully used in many institutions, and the actual diets employed in typical groups of cases. The section on foods and their composition is so arranged as to make it unnecessary for physicians owning this book to possess any other book on food values, either for treatment or diabetic or other patients. Standard recipes and diets for severe cases of diabetes are given, notably an appropriate diet for severe diabetic patients who are poor.

Miscellany

PROPAGANDA FOR REFORM.

Aromatic Spirits of Ammonia.—This is an old fashioned complex mixture. Its reputation has little scientific basis. Its effects probably are psychic, in the main. Such effects might be expected from the irritation of the nasal mucosa by the ammonia and to the flavor and odor of the lemon, lavender and nutmeg oils. The physical effect is probably due to the alcohol, though the ammonium carbonate and uncombined ammonia may have some restorative action by the irritation of the gastric mucosa or by their neutralization of nauseating acids in the stomach. When the effects of ammonium carbonate are desired, this is better given in aqueous solution. When the effects of alcohol are desired, whiskey is to be preferred (*Jour. A.M.A.*, July 1, 1916, p. 65).

Quality of Sodium Sulphite.—Investigation has shown that while the crystallized sodium sulphate is unreliable, the dried or desiccated form of sodium sulphite is generally of good quality and relatively permanent. A. H. Clark reports experiments showing that specimens of desiccated sodium sulphite keep for years with little deterioration (*Druggist's Circular*, July, 1916, p. 396).

Chemotherapeutic Treatment of Tuberculosis.—In the August issue of *The Journal of Experimental Medicine* Koga, Otani and Takano reports on a new treatment of tuberculosis and leprosy. Koga reports that the treatment of animals inoculated with a preparation of copper and potassium cyanide produces healing changes in tuberculous lesions. He also reports on the treatment of sixty-three cases and thinks that his preparation, which he calls "cyanocuprol," greatly improves or cures pulmonary tuberculosis in the first or second stages and even is beneficial in the third stage. Otani also gives a favorable clinical report of tuberculosis cases. Takano treated cases of leprosy with "cyanocuprol" with what appear to be beneficial effects. The Japanese investigators give no clear statement in regard to the composition of the copper-cyanide preparation which they used (*Jour. A.M.A.*, Aug. 5, 1916, p. 443).

Tartar Emetic and Sodium Bicarbonate Incompatible.—The A.M.A. Chemical Laboratory reports that when an aqueous solution of tartar emetic is added to a solution of sodium bicarbonate a clear solution results at first, but that on standing a precipitate of antimony hydroxide is formed (*Jour. A.M.A.*, Aug. 5, 1916, p. 462).

Sodium Sulphate as an Antidote to Phenol Poisoning.—Sodium sulphate in strong solution is one of the best known antidotes for phenol poisoning. At one time it was erroneously thought that the antidotal effect was due to the formation of sodium phenolsulphonate. It has been suggested that whatever action sodium sulphate has as an antidote for phenol may be due to some hindrance to absorption, and possibly also to added purgation. (*Jour. A.M.A.*, Aug. 12, 1916, p. 535).

Ambrine.—An article "War Letters of an American Woman" in the Aug. 2 issue of *"Outlook"* contains a glowing account of the use of "Ambrine" in the treatment of burns by a Dr. Barthe de Sandfort, Hospital St. Nicholas, Paris. Ambrine is a proprietary preparation which has been on the French market for years. It is a secret nostrum in that the proportions of the ingredients—"wax, paraffin and resin"—are not given. There is nothing original in an application of melted resin, beeswax and paraffin, although the correspondent of the *Outlook* seems to have been carried away with the idea that it is one of the great miracles of the day. (*Jour. A.M.A.*, Aug. 12, 1916, p. 535).

Quality of Chlorinated Lime.—J. P. Street, chemist in the Connecticut Agricultural Experiment Station, reports that of twenty-five samples of chlorinated lime (bleaching powder) which, according to the United States Pharmacopeia, should contain "not less than 30 per cent. of available chlorin," only three were found of full strength. Eight contained but traces of available chlorin. This is a dangerous situation when it is recalled that the public as well as the medical profession puts great dependence on the disinfecting powers of this inexpensive material (*Jour. A.M.A.*, Aug. 26, 1916, p. 695).

The U. S. Pharmacopoeia, IX.—The ninth revision of the U. S. Pharmacopoeia became official Sept. 1, 1916. It is a book of standards for drugs, but it is not a book of standard drugs. The pharmacopoeia includes substances which have been shown to be inert like the hypophosphites, complex and absolete mixtures like the compound syrup of sarsaparilla, and drugs which have been tried and found wanting like saw palmetto berries. There is one great advantage in specifying U. S. P. preparations: To do so, is to invoke legal standards of identity and purity. The only way to be sure of obtaining substances of therapeutic efficiency, however, is to exercise discrimination; the pharmacopoeia is no guide to therapeutically valuable drugs (*Jour. A.M.A.*, Sept. 2, 1916, p. 750).

The New National Formulary.—The National Formulary, 4th edition, becomes official September 1. It is published by the American Pharmaceutical Association. The preface says frankly "The scope of the present National Formulary is the same as in previous issues, and is based on medical usage rather than on therapeutical ideals. The committee consists entirely of pharmacists, or of men with a pharmaceutical training, and it cannot presume either to judge therapeutic practice or follow any particular school of therapeutic practice. The question of the addition or deletion of any formula was judged on the basis of its use by physicians and its pharmaceutical soundness. The considerable use by physicians of any preparation was considered sufficient warrant for the inclusion of its formula in the book, and a negligible or diminishing use as justifying its exclusion." The National Formulary contains a large number of formulas for preparations which in the main are complex and superfluous. From the pharmacist's point of view, the book is a valuable one. Physicians who have a scientific training in the pharmacology of drugs will not want it; others will be better off without the temptations offered by its many irrational formulas (*Jour. A.M.A.*, Sept. 2, 1916, p. 764).

The Hypophosphite Fallacy.—The Council on Pharmacy and Chemistry reports that the introduction of hypophosphites into medicine was due to an erroneous and now discarded theory as to the cause of tuberculosis and the properties of the hypophosphites. After a review of the literature and in view of experimental work the Council reviews the claims made for the following and declares them ineligible for New and Nonofficial Remedies: Fellow's Syrup of Hypophosphites, Fellows, Medical Mfg. Co., Syrupus Roborans (Syrup Hypophosphites Comp. with Quinin, Strychnin and Manganese), Arthur Peter and Co., Schlotterbeck's Solution Hypophosphites of Lime and Soda (Liq. Hypophosphitum, Schlotterbeck's), The Schlotterbeck and Foss Co., Robinson's Hypophosphites, Robinson-Pettet Company, Eupeptic Hypophosphites, Nelson, Baker and Co., McArthur's Syrup of the Hypophosphites Comp. (Lime and Soda), The McArthur Hypophosphite Co. Though in general no therapeutic claims so far as the hypophosphites are concernel are made for the following, the Council held their use irrational and directed their omission from New and Nonofficial Remedies which now describes them: Borcherdt's Malt Olive with Hypophosphites, Maltzyme with Hypophosphites, Maltine with Hypophosphites and Maltine with Olive Oil and Hypophosphites (*Jour. A.M.A.*, Sept. 2, 1916, p. 760).

Pulvoids Calcylates.—The Drug Products Co., New York markets tablets under the name "Pulvoids Calcylates 5 gr." with claims as to composition which, though vague, suggests that the product is a mixture of calcium salicylate and strontium salicylate. The Council on Pharmacy and Chemistry found that there was no evidence that a mixture of the salicylates of calcium and strontium is superior to sodium salicylate and declared Pulvoids Calcylates ineligible for New and Nonofficial Remedies because unwarranted therapeutic claims were made for the mixture; because the name does not describe the composition; and because the mixture is an unessential modification of an established remedy (sodium salicylate) (*Jour. A.M.A.*, Sept. 9, 1916, p. 827).

Secretogen.—The Council on Pharmacy and Chemistry has reported that commercial secretin preparations examined (Secretogen and Duodenin) contained no secretin and also that secretin is inert when given by mouth. While practically admitting the correctness of the Council's findings, the manufacturer of Secretogen (The G. W. Carnrick Co.) in a letter to the Council sets forth the company's claims for secretogen on a new and altogether improbable basis. Since the arguments are purely speculative, the Council reaffirms its previous action declaring this preparation ineligible for New and Nonofficial Remedies (*Jour. A.M.A.*, Sept. 9, 1916, p. 828).

Arsenobenzol and Diarsenol.—The Council on Pharmacy and Chemistry reports that it found Arsenobenzol, made by the Dermatological Research Laboratories, Philadelphia Polyclinic, Philadelphia, and Diarsenol made by the Synthetic Drug Com-

pany, Toronto, Canada, substantially identical with salvarsan in composition, and equal to salvarsan in therapeutic efficiency. The Council reports that these products have not been admitted to New and Nonofficial Remedies because there is a doubt as to the legality of their sale in the United States. But for this doubt as to their legal status, both products would be entirely eligible to N. N. R. (*Jour. A.M. A.*, Sept. 16, 1916, p. 879).

Sulfuryl Monal.—According to the label these "pastilles" contain "Sulfuryl (combined polysulphurets)" which "Liberates nascent sulphuretted Hydrogen." The A.M.A. Chemical Laboratory reports that the tablets had the taste of licorice extract, an odor of hydrogen sulphide and that a tablet liberated about 6 c. c. hydrogen sulphide. The Council on Pharmacy and Chemistry reports that sulphides are practically ignored in modern textbooks and declared Sulfuryl Monal ineligible for New and Nonofficial Remedies because unwarranted and dangerous therapeutic claims were made for it (*Jour. A.M.A.*, Sept. 16, 1916, p. 894).

Bi-Taride Tablets.—These are dark brown tablets with a strong tarry odor, sold by the Germicidal Products Corporation, New York. The Council on Pharmacy and Chemistry reports that the preparation was found ineligible for New and Nonofficial Remedies because the composition of the tablets is essentially secret, because the therapeutic claims made are exaggerated and an invitation to the public to depend on them in serious diseases and that the combination of coal tar derivatives and boric acid (said to be constituents of the tablets) is irrational. (*Jour. A.M.A.*, Sept. 16, 1916, p. 895).

Mark White Goiter Treatment.—The Council on Pharmacy and Chemistry reports that Mark White Goiter Serum and Mark White Iodinized Oil, submitted by the Mark White Goiter Serum Laboratories. Chicago, was not admitted to New and Nonofficial Remedies because the sale in interstate commerce of the "serum" has not been authorized by the Treasury Department, because the statements regarding composition are indefinite and contradictory, because the therapeutic claims were not substantiated and because the routine treatment or goiter is irrational. Mark White is a veterinarian and, in association with various physicians, has exploited his treatment, at one time called "Goiteine" from different cities. In Chicago he has been associated with Dr. Rachel Watkins (*Jour. A.M.A.*, Sept. 23 1916, p. 967).

The Therapeutic Value of the Glycerophosphates.—In view of the very convincing evidence that the glycerophosphates do not possess the therapeutic properties attributed to them and are not superior to ordinary phosphates, the Council on Pharmacy and Chemistry examined the following proprietary glycerophosphate preparations, Tonols (Schering and Glatz) comprising Iron, Lime, Lithium, Magnesium, Manganese, Potassium, Quinine, Sodium, and Strychnine "Tonols," Duotonol Tablets, Triotonol Tablets, Quartonol Tablets, Sextonol Tablets, Phosphorcin Compound (Eimer and Amend), Robinol (John Wyeth and Bro.), Phosphoglycerate of Lime (Fougera and Co.), Elixir Glycerophosphates, Nux Vomica and Damiana (Sharp and Dohme). The Council reports that unwarranted therapeutic claims are made for all of these preparations. In addition the composition of Robinol and Elixir Glycerophosphate, Nux Vomica and Damiana is semi-secret, and Tonols, Phosphorcin Compound and Robinol bear objectionable names (*Jour. A.M.A.*, Sept. 30, 1916, p. 1033).

Kora-Konia.—Kora-Konia is a dusting powder advertised to the medical profession by the "House of Mennen." It is claimed to be indicated in the treatment of acne, dermatitis, eczema, intertrigo, etc. and is said to possess germicidal qualities. The A.M.A. Chemical Laboratory reported that the powder essentially consists of talcum and zinc stearate in about equal proportions to which small quantities of magnesium carbonate and boric acid have been added. The Council on Pharmacy and Chemistry believes that the extravagant and unwarranted therapeutic claims made for this simple dusting powder are likely to lead the public, as well as the thoughtless physician, to place unwarranted confidence in it and therefore declared Kora-Konia ineligible for New and Nonofficial Remedies (*Jour. A.M.A.*, Sept. 30, 1916, p. 1034).

The requirements of a special diet for diabetics has led to the addition of several new foods to the menu of the Battle Creek Sanitarium. Bean sticks are largely used. They are made from the Soya bean and contain no carbohydrates, while showing a high content of protein and fat. The root of the lotus, a water plant, and a species of lily also yield a food lacking carbohydrates, but the nutritive value is less than that of bean sticks. Bamboo shoots are also served, but they contain a small amount of carbohydrates.

A recent investigation made by the U. S. Public Health Service in connection with studies of rural school children showed that 49.3 per cent. had defective teeth, 21.1 per cent. had two or more missing teeth, and only 16.9 per cent. had had dental attention. Over 14 per cent. never used a tooth brush, 58.2 per cent. used one occasionally and only 27.4 per cent. used one daily. Defective teeth reduce physical efficiency. Dirty, suppurating, snaggle-toothed mouths are responsible for many cases of heart disease, rheumatism, and other chronic affections. The children are not responsible for the neglected state of their teeth. The ignorant and careless parent is to blame for this condition—a condition which hampers mental and physical growth and puts a permanent handicap on our future citizens. School teachers can and are doing much in inculcating habits of personal cleanliness on the rural school child but this will fail of the highest accomplishment unless parents co-operate heartily and continuously. This is a duty which we owe our children.

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Original Articles

SARCOMATOUS DEGENERATION OF UTERINE FIBROIDS WITH REPORT OF EIGHTEEN CASES.*

FRANK C. WITTER, M.D., F.A.C.S.
PETOSKEY, MICH.

Of all the neoplasms affecting the uterus, sarcoma is the most uncommon type, forming about 2 per cent. of all uterine tumors and about 4.8 per cent. of the malignant types (1)

As to the origin of these growths, we may say they may be considered to arise from three sources, namely:

(a) Arising from the mucosa.
(b) Arising from the uterine wall.
(c) Arising from degeneration in pre-existing myofibromata.

It is with this latter type only that I wish to deal. The material is from the service of Professor Reuben Peterson, head of the Department of Gynecology and Obstetrics in the University of Michigan, and covers 6,084 cases of pelvic pathology. In this number there were twenty-one cases of sarcoma, eighteen of which resulted from degeneration of fibroids.

CASE I. Mrs. B. J., age 52, American, housewife. Admitted September 15, 1903. Has history of tuberculosis in one brother and one sister. Menses at 14 years, negative. One child. Her pelvic trouble is about twelve years standing. Two months before entering the hospital she began having uterine hemorrhages, lasting about ten days at a time. There was a dark colored constant discharge, bright red at times which is now beginning to have a foul odor.

Examination.—The os is about the size of a quarter, patulous; projecting from it is a grayish, fibroid-appearing mass. The uterus is about the size of a cocoanut.

Operation.—September 16, 1903. A longitudinal incision was made in the posterior lip, the hand introduced into the vagina and the mass separated with the fingers.

Pathology.—A somewhat grayish appearing encapsulated growth, spherical in shape, measuring about 6 centimeters in diameter. On section the central portion of the tumor is pinkish in color, differing from the appearance at the periphery. The pinkish area yields abundant cellular material on scraping.

Microscopically.—A section from the central portion of the tumor shows the characteristic structure of a spindle celled sarcoma.

Second Operation.—October 8, 1903. Vaginal Hysterectomy. The uterus measures 11 x 7 x 4 centimeters, is greatly elongated and the cervix is excavated the canal being somewhat extensively dilated. About 4 centimeters above the internal os the mucosa is apparently normal. Extending into the uterine cavity is a small submucous fibroid. There are also a few smaller interstitial fibroids in the anterior wall. No further evidence of sarcoma could be found in the uterine mucosa or the small fibroids. No enlarged pelvic glands were discovered.

October 1, 1905. A letter from her home physician reports no signs of any recurrence.

CASE II. Mrs. E. T., age 49 years, American, housewife, widow two years. Admitted Feburary 9, 1904. One sister died of pulmonary tuberculosis. Personal history negative. Menses at 16 years, regular every twenty-eight days. Three children, the oldest 26, the youngest 17. Instruments at the second birth. Chills and fever after the last child. She first noticed trouble in the pelvis in 1899 when she began flowing excessively at time of her periods. This has continued more or less constantly ever since. For the last six weeks the flow has been of a lighter color than usual and there has been some odor.

Examination.—There is considerable distension of the abdomen which is marked on the left. The umbilicus does not protrude, superficial abdominal veins are not enlarged. Palpation reveals a hard mass in the median line extending within 4 centimeters of the umbilicus. Laterally it reaches 10 centimeters from the median line on the left and to within 6 centimeters of the anterior superior spine. To the right is a movable growth about the size of a turkey's egg situated near Poupart's ligament. There is a mass in the right iliac region the size of a hen's egg which slips out from under the fingers easily. Vaginal examination shows the clitoris to be free, the external and internal perineum torn. The cervix points backward, the uterus is movable, irregular, and is made up of irregular nodular masses continuous with the masses described above. The lungs show weak vesicular breathing with a slightly prolonged expiration. There are squeaking rales over both apices and under both claviscles.

Operation.—February 19, 1904. The abdomen was opened by a median incision 13 centimeters in length.

*Read before the Section on Gynecology and Obstetrics, M.S.M.S., 51st annual meeting, Houghton, August, 1916.

In packing back the intestines a blood cyst of the right ovary was ruptured. The left ovary also contained a large blood cyst. The uterus was enlarged and nodular, removed by supravaginal hysterectomy, including with it both tubes and ovaries.

Pathology.—The uterus measures 13 x 8 x 8 centimeters. The fundus extends 5 centimeters above the insertion of the tubes. There are few adhesions. On section through the anterior wall of the uterus there is found internally a submucous growth springing from the fundus measuring 8 centimeters long by 6 centimeters wide and filling the entire uterine cavity and reaching within 1 centimeter of the internal os. The lowest portion of the growth is softened and necrotic presenting on one side a small cavity formation. Microscopical examination shows a myofibroma with hyalin areas, other areas are exceedingly cellular the nuclei of the cells are irregular and the cells themselves take on a deeper stain. These latter areas are typical of beginning myosarcoma.

The patient made an uninterrupted convalescence, the wound healing by first intention. She was discharged March 23, 1904. In May of the same year a letter from the patient states she is feeling quite well and strong. December 27, 1904 her home physician reports the patient in poor condition due to pulmonary tuberculosis. February 25, 1905, patient died from the pulmonary condition. Her physician reports an apparent cure from the pelvic trouble, death being due entirely to the pulmonary condition.

CASE III. Miss M. H. Admitted September 24, 1904, age 30, weight 150 pounds. Father died of stomach trouble. Patient has always enjoyed good health until a year previous to entering the hospital.

Menstrual History.—Negative.

Present trouble began in March, 1904 with severe pain across the back and above the hips which was aggravated by being on her feet. An aching pain was most frequent. The periods occurred every two weeks lasting slightly longer than usual. The pain was accompanied by a feeling of pressure on the bladder. She has chronic constipation with difficult evacuation of the bowels at times. There is a constant feeling of pressure in the lower pelvis.

Examination.—October 1, 1904. The abdomen is pendulous with a large amount of adipose tissue. Clitoris free, external and internal perineum intact. The cervix is conical and lies low down in the pelvis. There is a mass in the pelvis about the size of a cocoanut connected with the uterus, this occupies more of the left side than of the right. The appendages are not palpated.

The heart and lungs are negative.

Operation.—October 14, 1904. The abdomen was opened by a 16 centimeter median incision. A small amount of ascitic fluid escaped when the peritoneum was opened. An irregular shaped tumor of the uterus presented. The uterus was amputated at the level of the internal os.

Pathology.—The uterus itself is small, measures 3.5 x 3.5 x 2.5 centimeters, while springing from the anterior and posterior surfaces are numerous hard, firm growths varying in size from 2 millimeters to 6 centimeters in diameter. Some are sessile, others pedunculated. The cut surface of these growths shows the characteristic whorled appearance of myofibroma. Scraping the cut surface of one of the larger growths yields some cellular material.

Microscopical examination of the growths are all typical myofibromata, while sections from the one mentioned in particular shows here and there areas of increased cellularity, the cells have no characteristic arrangement but take the stain more deeply, have irregular nuclei and very little connective tissue between the cells.

Diagnosis.—Myofibroma with beginning myosarcoma.

Post Operative.—The wound healed November 11, 1904, there having been a slight infection of the wound with an accompanying temperature ranging from 100-101.2. Otherwise the convalescence was uneventful. Discharged November 19.

May 21, 1905. A letter from the patient states that she has been unable to do any work since returning home and that she has been obliged to wear an abdominal support.

CASE IV. Mrs. M. E. H., American. Dressmaker. Admitted October 12, 1906. Mother died at 54 and one brother at 50 of cancer of the stomach. The patient is the ninth of eleven children of whom seven are living. She had typhoid at twenty, otherwise her personal history is negative. Menses at 13. Last period in July 1905, always regular every twenty-eight days. No pain with the periods, no leucorrhea. Married at 31. Five children, all living. The oldest is 30 and the youngest is 12. No history of puerperal sepsis. The patient weighs 153 pounds and is of good general appearance. Heart and lungs are negative.

Eighteen years ago she noticed a lump about the size of an English walnut above the umbilicus which gradually increased in size until it was about the size of a man's fist. Occasionally it is tender but never causes any severe pain. Two weeks before entering the hospital she had a severe pain in the right side of the pelvis which lasted about twenty-four hours and was accompanied by a chill on the evening of the onset, followed by some rise in temperature. She has been very tender on this side since the attack but the pain has gradually disappeared.

Examination.—The abdomen is rich in adipose tissue. Tender over the lower portion in the median line. Through the vagina the uterus is very large, backward and quite firmly fixed in the pelvis. The appendages are not distinctly made out.

Operation.—October 19, 1906. Median abdominal incision 14 centimeters in length. Upon entering the peritoneal cavity a smooth tumor resembling a bicornuate uterus came into view. The omentum was adherent to the fundus for about 7 centimeters and showed signs of recent inflammation. This was tied off and removed. The uterus was also removed by amputation through the cervix, taking with it both tubes and ovaries. The tumor in the abdominal wall proved to be a simple lipoma. The patient made an uneventful recovery and was discharged on November 12, 1906.

Pathology.—The uterus measured 9.5 x 8.5 x 6.5 centimeters. The surface of the anterior right fundus shows a few fine vascular adhesions. The fundus is the seat of two symmetrical fibroids, each about the size of an English walnut, having a slight sulcus

between them which gives the uterus a bi-lobed appearance. The uterus itself is pushed backwards and to the right in a horizontal direction, the growths being in the anterior fundus. On section, the anterior wall measures 0.5-3.0 centimeters, in thickness, the fibroid on the left side on section is markedly injected, softened and presents necrotic appearing areas. On scraping with the knife these areas yield some cellular material. The mucosa is hyperplastic, thickened and deeply injected over the entire surface. The tubes are negative, the ovaries atrophic and hyalin. Microscopical examination of sections taken from the growth presenting the injected, necrotic appearing areas shows a beginning sarcomatous change which to all appearances is as yet limited to the growth in which it is found. The fibrous elements have lost their characteristic whorled appearance which is found in fibroid growths and in their place are cells of less regular outline, somewhat smaller on the whole, having large irregular nuclei which take the basic stain more deeply, making them readily noticeable to the examiner. No glands were removed from this case as it was supposed to be clinically a case of fibroids only.

An indirect report two years later states that the patient is enjoying good health.

Case V. Mrs. M. F., American, housewife. Weight 132 pounds, age 47. Admitted February 5, 1907. Family history negative. She was frail as a child, had typhoid at 15 which was followed by erysipelas. Menses began at 14, with very little pain at the periods and the flow shows nothing unusual. Married 29 years and has never been pregnant. In December, 1905 she began having a sensation of pressure in the region of the bladder causing frequent urination which would often necessitate getting out of bed as frequently as twelve times during the night. Sometimes she would have some trouble in getting the urine started. At times she has been able to feel a mass in the lower abdomen when lying on her back. She has not noticed any increase in size of this mass for the year previous to her entrance to the hospital. She tires very quickly when walking.

Examination.—February 5, 1907. Temperature 98.2°. Slightly enlarged thyroid. Thoracic organs negative. The abdomen shows a slight elevation just above the pubis, more on the left then on the right side. Palpation reveals a mass extending on the left upwards to one hand's breadth below the umbilicus. Downwards it reaches to Poupart's ligament. On the right side it cannot be felt above Poupart's ligament. The mass is very tender and immovable. The entire pelvis is blocked by an immovable mass connected with the mass palpated above. It is very hard and imparts no sense of fluctuation.

Operation.—February 15, 1907. The abdomen was opened by a median incision 14.5 centimeters in length. There was a small amount of ascites present in the peritoneal cavity. The large tumor was found firmly wedged in the pelvis. This was elevated and removed together with both tubes and ovaries by amputation through the cervix.

The patient made a steady convalescence and was discharged March 7, 1907.

Pathology.—The uterus is the seat of an irregular mass measuring 14 x 11 x 10 centimeters. The superior surface is covered by numerous adhesions. Springing from the anterior wall are two small fibroid growths, one is about two centimeters in diameter and is attached to the uterus by a thin band of serosa 1 millimeter in diameter, the second one is slightly larger than the first, lies just beneath it and is sessile. Springing from the posterior wall and comprising the greater part of the mass is a large intramural fibroid 9 centimeters in diameter. This has an irregular enlargement on the right side 6.5 centimeters in diameter. The uterine mucosa is everywhere atrophic. On cutting through the largest growth there is found a softened central area which is not found in any of the other nodules, this area yields some cellular material on scraping. The color is somewhat more grayish than the surrounding portion of the tumor. A microscopical section through the softened area shows a picture very similar to the one described in the preceding case except that the condition is a little more advanced.

Diagnosis.—Myofibromata, the larger nodule showing a beginning myosarcoma.

Case VI. Mrs. M. W., American, housewife, age 62. Admitted October 2, 1907. One maternal and one paternal grandmother died of cancer. Married at 22, five children, menopause at 47. Flow recurred at 53 and became almost continuous for four months, then stopped. At this time she noticed a tumor in the left lower abdomen the size of a walnut. This apparently disappeared and she was well for seven or eight years. More than a year ago the tumor reappeared and has grown slowly toward the right. During the summer of the present year (1907) she had several slight hemorrhages. No pain but a slight tenderness on the right side. Considerable offensive vaginal discharge the last few weeks.

Examination.—There is an abdominal swelling reaching from the pubes to the umbilicus symmetrical in outline, reaching to within one finger breadth of either anterior superior spine, slightly nodular on palpation with dullness over the surface of the growth. Measurements:

Umbilicus to pubes 22 centimeters.

Umbilicus to right anterior superior spine, 14 centimeters.

Umbilicus to left anterior superior spine 18 centimeters.

Circumference around body at highest point of tumor, 94.5 centimeters.

There is a greenish brown discharge from the vagina and the os admits the finger tip. The cervix appears continuous with the growth above.

The urine shows a trace of albumin. The blood an increase of leucocytes.

Operation.—October 11, 1907. Median incision 6 inches. The peritoneum and pelvic were very friable. The blood vessels ruptured in attempting to elevate the tumor. A loop of bowel was adherent to the infundibulo pelvic ligament almost to the tube. The right tube was adherent posteriorly and was excised separately. The uterus was amputated and removed. A small mass the size of a hickory nut was found between the folds of the broad ligament just to the left of the cervical stump. This

was multinodular and friable, having a malignant appearance. A similar smaller growth was removed from the right broad ligament.

Pathology.—The uterus is symmetrically enlarged with adhesions along the lateral borders. The peritoneal surface over the fundus presents many small, elevated, subserous nodules of grayish yellow color which are hard and vary in size from 1 to 5 millimeters. A larger subserous nodule 3½ centimeters is just posterior to the right cornua. This nodule has a granular surface. The uterine wall is soft and its vessels congested. The posterior wall measures 1 to 1.5 centimeters. The endometruim appears to be of uniform thickness throughout. Springing from the anterior surface of the inner wall at the fundus is a pear shaped growth about 12 x 10 centimeters. This protrudes from the cervix through the external os presenting an anterior short lip and a posterior long lip with a sulcus between. This growth is soft and externally smooth, of a blotchy cream color. On section it shows interlacing bundles of fibrous tissue with a more cellular soft structure between the mesh-like network.

Left tube, 8 centimeters long, 5 to 8 millimeters in diameter. On the under surface are several firm nodules up to 2 centimeters in diameter. The walls are thickened at these points.

Right tube—Very similar to left.

Nodes from broad ligament are about eight in number and vary in size from 1 to 3 centimeters in diameter, having a somewhat fibrous cortex extending in strands into the growth. In the spaces between the strands is a material very similar to that found in the long tumor occupying the anterior uterine cavity.

Diagnosis.—Myosarcoma of uterus with extensive metastoses in uterine wall, broad ligament, ovaries and tubes. Undoubtedly an example of myofibroma undergoing sarcomatous change.

For the history of the following cases I am indebted to Dr. Frederick Loomis of the Gynecological Staff at the University of Michigan.

Case VII. Mrs. A. B., age 45.

Present Trouble.—Patient comes to the hospital because of growth which comes down through the vagina, and for hemorrhages of two years' duration.

Operation.—Vaginal anterior and posterior hysterotomy. Excision of polyp. Curettage. Date, Nov. 22, 1910.

Source of Material.—Small amount of curettings and a submucous cervical polyp about the size of two walnuts. The polyp was pear shape, soft, very much reddened and injected. Upon section shows ordinary fibroid tissue with very marked edema. No macroscopic evidence of malignancy.

Pathological Report.—Curettings, glandular hyperplasia. No malignancy. Polyp myosarcoma. Metastasis not likely to occur. Base of polyp should be excised.

Case VIII. No. 3633. Mrs. J. D., age 40. Present trouble: Patient comes to Hospital because of headache, backache, constipation and flowing between periods. Periods last from twenty days to three months. For the past year has felt mass in lower abdomen.

Operation.—Dilatation and curettage. Supravaginal hysterectomy. Bilateral salpingo-oophorectomy. Date, August 23, 1910.

Source of Material.—Uterus, both tubes and ovaries. Uterus enlarged, 8 x 7 x 5 centimeters. Is the seat of a general fibroid mass. From the superior peritoneal surface a small fibroid the size of a hickory nut arises. The large fibroid is in the posterior uterine wall. The perintoneal coat is not adherent. The endometrium is atrophic and congested. No degeneration changes in tumor. Tubes: right 6 centimeters long, patent, not adherent, fimbria free, lumen patent, negative upon cross section. Left similar to right. Right ovary measures 3 x 2 x 1 centimeters apparently normal. Left ovary measures 3 x 2 x ½ centimeter.

Pathological Report.—Very cellular leiomyofibroma becoming fibro sarcoma, atrophy of endometrium. Chronic passive congestion. Fibroid tubes. Hyalin ovary. Received a letter from patient four months later, she was feeling well with the exception of some backache and menopausal symptoms.

Case IX. No. 3864. Miss W. D., age 21. Present trouble: Patient comes to Hospital because of bleeding and a deep seated pain in medium line. Duration one year, one month.

Operation.—Dilatation and Curettage. Vaginal cesarean section for submucous fibroid of posterior wall. Date Feb. 14, 1911.

Source of Material.—Many small pieces of submucous fibroid which are very soft, removed by vaginal cesarean section. Altogether the tumor is the size of a big English walnut.

Pathological Report.—Atrophic tube, chronic congestion. Leio myo fibroma with an area of large giant cells embedded in muscle tissue. Aside from the area of giant cells no other evidence of same tumor which was undoubtedly a myo sarcoma. Ovary is cystic. Cervical catarrh and unhealed erosion.

Second Operation.—Bilateral salpingo-oophorectomy. Pan hysterectomy. Gall bladder and appendix negative.

Source of Material removed from second operation: Uterus, tubes and ovaries removed by pan hysterectomy. Uterus is small, very soft, symmetrical, pear shaped, measuring 7 centimeters in length, 3 centimeters in width and 2 centimeters in thickness. It is free from adhesions. Upon longitudinal section the uterine wall measures 1-1.5 centimeters in thickness, the endometrium having been removed by previous curettage. From the posterior wall, about midway between the external os and the fundus is a small excavated area, the base of which appears brown. About it are several hemorrhagic areas of endometrium. There is no evidence of any infiltration about. This is undoubtedly the attachment of the polyp removed at her previous operation. The tubes and ovaries are in all respect similar to one another. The tubes measure 8.5 centimeters in length, are both free from adhesions. The fimbriated extremities are free and patent and they look very normal. The ovaries are of the same size, measuring 4.5 x 3 x 1¾ centimeters, free from adhesions. Upon longitudinal section are quite edematous showing all stages of ova, corpora lutea and Gaffian follicles.

Pathological Report.—Malignant tumor, alveolar sarcoma with small cell nests. April 25, 1911, received a letter from patient saying that she was feeling fine, gaining in strength every day.

Case X. No. 4293. Mrs. C. G., age 44. Present trouble: Comes to Hospital for burning in lower abdomen, and dull headache from occiput to eyes. Contracted gonorrhea and syphilis fifteen years ago. Vaginal discharge and severe menstrual flowing. Treated for her venereal and syphilitic condition. Has a mass in abdomen.

Operation.—Supravaginal hysterectomy. Bilateral salpingo-oophorectomy. Date January 22, 1912.

Source of Material.—Uterus, tubes and ovaries, and the remains of two cyst walls which are mutilated far beyond description. Uterus measures 8 x 4 x 9 centimeters. On its posterior surface are the remains of old adhesions. The tubes are thickened. The left ovary measures 9 centimeters, the right measures 10 centimeters. On the left side there is a mass of unrecognizable tissue, probably remains of cyst wall, extending from the upper pole of the uterus. The myometrium measures 2.5 centimeters. On section, one or two small pin head fibroids of myometrium. Posterior surface is covered by remains of old, dense adhesions. Appendages are badly mutilated.

Pathological Report.—Cervical catarrh. A very cellular myoma, so cellular is probably a myo-sarcoma. Miliary tubercules. Large monolocular cyst of the ovary with thick hyaline wall containing some lime salts and blood pigment. Areas of inflammation throughout the broad ligament; chronic purulent salpingitis nearly healed. Chronic interstitial and glandular endometritis. Jan. 28, 1916, developed peritonitis third day and died on this date.

Case XI. No. 4480. Mrs. B. C., age 35. Present trouble: Patient comes to Hospital because of irritation in the region of the bladder, and a sense of pressure in lying down. Duration two years. Backache accompanied present trouble.

Operation.—Myomectomy. Date July 2, 1912.

Source of Material.—Irregular fibroid tumor, oblong, in shape. Measures 7 x 4.5 x 5 centimeters. Surface is smooth and there are no adhesions. Surface is pale with numerous injected vessels radiating from the point of attachment to the pedicle. The pedicle measures about 15 millimeters in diameter. On section the tumor is firm and the cut surface has a whorled appearance.

Pathological Report.—A very cellular leio myoma. A myo-sarcoma. Discharged July 18.

Patient returned August 5.

Operation.—Myomectomy. Panhysterectomy. Bilateral salpingo-oophorectomy.

Source of Material.—Uterus, tubes and ovaries. The uterus measures 9 x 6.5 x 3.5 centimeters. The surface is generally smooth, except posteriorly on the right side, there is a small patch of adhesions. On the anterior surface at the upper part of the cervix is a small, round nodule projecting over the surface. This measures 2 centimeters in diameter. The endometrium is pale pink, rather abundant, soft, can easily be scraped off. The right tube and ovary are apparently normal, no adhesions. The tube measures 7 centimeters by ¾ in diameter. The end is open. The ovary measures 3¼ x 2 centimeters by 1 centimeter. The cut surface show a few healed cysts. The left tube and ovary are similar in every way. The right tube measures 9 centimeters long by ¾ in diameter. The ovary measures 3.5 x 2.5 x 1.

Pathological Report.—Hyalin ovary. Chronic tubo-ovarian adhesions. Old healed salpingitis, endometritis, marked proliferation of walls of blood vessels in ovaries. Small tubercle in endometrium. Discharged August 23. Died October, 1915.

Case XII. No. 4625. Mrs. E. M., age 47. Present trouble: Patient comes to Hospital because of excessive flowing and thin watery discharge, sometimes offensive, onset six years ago; three or four years ago noticed an enlargement in abdomen which felt like fluid.

Operation.—Anterior colporrhaphy. Hysterectomy. Excision of polyp. Date October 11, 1912.

Pathological Report.—Leiomyofibroma with very cellular atypical areas. Beginning myo-sarcoma.

Case XIII. No. 5090. Mrs. E. R. age 29. Present trouble: Patient comes to Hospital on account of painful menstruation of about four months' duration, also for a mass in abdomen which she has noticed for about one month.

Operation.—Supravaginal hysterectomy.

Source of Material—Large fibroid tumor measuring 17 x 12 x 9 centimeters after splitting. The tumor shows beginning hydropic degeneration.

Pathological Report.—Leio-myo fibroma. Some areas are so cellular as to raise a suspicion of myo-sarcoma. August 6, 1913 discharged against advice.

Case XIV. No. 5286, age 43. Present trouble: Patient comes to hospital because of pain in lower abdomen, and backache for past five months. Tender across abdomen; duration of flow lessened from one week to four or five days; regular but very much more profuse in amount; six to seven napkins per day; leucorrhoeal discharge more profuse within past five months. No difference noticed in abdomen but has felt something like tumor mass in vagina for past year.

Operation.—Supravaginal hysterectomy. Bilateral salpingo-oophorectomy. Appendectomy. Date Oct. 21, 1913.

Source of Material.—Uterus, tubes and ovaries and appendix. The uterus was amputated supravaginally above the cervix. It was very irregular in form having the appearance of a double organ due to the fact that over the left posterior side there was a large fibroid nodule as large or larger than the uterus itself, measuring about 7 centimeters in diameter. The uterus itself was somewhat irregular, measuring about 8 x 6 x 5 centimeters and the wall being of uniform thickness throughout, 2.5 centimeters. From the anterior surface just above the cervix are two subserous fibroids nodules side by side about as large as a hickorynut. The posterior surface of the uterus shows evidence of numerous old dense adhesions. On section there seems to be numerous other smaller fibroid nodules situated in the body of the muscle, also just under the mucosa. The endometrium appeared normal. The nodules on section appear to be glistening and yield no scrappings. The left tube appears as a large distended

sac, about 5 centimeters in diameter, very thin walled and contains a brownish fluid. The left ovary is somewhat larger than normal, is flattened and quite fibrous. The right tube appears larger, thicker and firmer than normal, being about 1 centimeter in diameter. The right ovary shows changes similar to the left. The appendix is about 5 cubic centimeters and shows no concretions or constrictions. The distal half is covered over each side with large amount of fat. There are remains of old adhesions throughout the entire length.

Pathological Report.—Appendix; lymphoid hyperplasia. Increase of connective tissue; tube, old hematoma; the plications are filled with phagocytes containing hemosiderin; large corpus luteum in ovary. Endometrium, marked glandular hyperplasia. Interstitial inflammation. Myofibroma. Cystic cervical glands with chronic catarrh, small areas of atypical hypertrophic muscle; myosarcoma. One portion of a larger myoma shows very atypical muscle cells.

Case XV. No. 5439. Age 50. Present trouble: Patient comes to Hospital because of pain in lower abdomen, back, and down limbs. Duration two months. For past two months has felt mass just above pubis the size of a hen's egg, very tender but has noticed no change in size. Unable to retain urine when on her feet; periods regular up to two months ago but have been more excessive for past three years; skipped two periods previous to the last one.

Operation.—Dilatation and curettage. Perineorrhaphy: supravaginal hysterectomy; left saplingo-oophorectomy, appendectomy. Date Jan. 2, 1914.

Source of Material.—The specimen consists of appendix, uterus with one tube and ovary, and a small amount of normal appearing curettings. Uterus removed above cervix; in the wall of the uterus are two small fibroid nodules, one at either horn, giving the appearance of a bicornuate uterus. There are also smaller nodules scattered about the wall. The largest of the fibroid nodules measures 4 x 4 x 6 centimeters. The next largest is about the size of a small hen's egg. The uterine cavity is negative. The tube is very small, and atrophic, otherwise negative. The ovary is large, soft and cystic.

Pathological Report.—Very small fragments of curettings containing cystic glands. Multiple small myofibromata. A larger one is very cellular, with atypical cells. Myo-sarcoma. Prognosis guarded, although on the whole it is good because of the very thick capsule on this growth and the fact that the cellular changes are more central. One tube is normal, the other shows a very marked fibroid healed salpingitis. Fecal concretion in appendix. Atrophy of mucosa. Hyalin ovary. Small organizing blood clot on ovary.

Case XVI. No. 5448. Age 50. Present trouble: The patient comes to the Hospital because of pain in left pelvis, with backache; for seven years patient has had pains in back, radiating down thigh, at which time she noticed a mass in the abdomen about the size of a walnut; this is tender, and has increased rapidly in size within the past six months.

Operation.—Supravaginal hysterectomy. Date January 2, 1914.

Source of Material.—Uterus which is removed above the cervix. In the posterior wall is a large fibroid mass measuring 11 x 9 x 9 centimeters. This mass on section has the appearance of a medullary carcinomatous change. The cavity of the uterus is rather large, and the mucosa is hypertrophied, soft and friable, measuring about 3.5 centimeters in thickness. The wall of the uterus, lying over this mass is rather soft. The specimen is very soft and is suspicious of a pregnancy. This, however, was not the case.

Pathological Report.—Leiomyfibroma. Hyalin in part, in part showing edema. Very cellular areas. Myo-saroma developing in a leiomyofibroma. March 2, 1914, received a letter from patient saying she was feeling fine.

Case XVII. No. 5645. Age 40. Present trouble: Patient comes to the Hospital because of excessive bleeding which began after last period, March, 1914, flowed normally from March 2-5, for about three weeks; in bed two weeks. Slightly nauseated, vomited on one occasion, vomitus not bloody. She has thought from own examination there seemed to be tumor mass present.

Operation.—Supravaginal hysterectomy; bilateral salpingo-oophorectomy. Appendectomy. Date April 14, 1914.

Source of Material.—Uterus, both tubes and ovaries and appendix. Uterus amputated above the cervix, very large and irregular in form, measuring approximately 10 x 10 x 6 centimeters, very irregular due to the presence of numerous fibroid nodules in size varying from that of a pea to that of a small egg, several of which are situated sub-serously with a rather pedunculeated base, others are interstitial, and several encroach upon the mucosa. Nodules upon section are firm, fibrous, glistening, contain little or no blood and yield no scrapings. Several of the nodules appeared to have undergone hydropic degeneration, and the contents have become cystic, or semi-solid. The largest one is situated along the right side of the uterus and is very soft and cystic. Both tubes are dilated at their distal extremities to about the size of eggs and are buried in these adhesions. The surface of the uterus is likewise buried in firm dense adhesions. To the right tube is attached the appendix which measures about 4 centimeters in length, about ½ centimeter in diameter and is likewise buried in dense adhesions. The peritoneal surface is thickened and the vessels are somewhat injected. The uterine muscle is of variable thickness, two or three centimeters, due to the presence of fibroid nodules. The endometrium overlying several submucous fibroids is soft, thickened and edematous and appears to be very vascular.

Pathological Report.—Myosarcoma. Hyalin and custic ovary. Degeneration leio-myoma. Old abscess of tube; hydro-salpinx; chronic ovaritis; tube-ovarian abscess filled with caseous material. Dilated appendix.

Case XVIII. No. 6084. Age 48. Present trouble: Patient comes to Hospital because of pain and soreness in lower quadrant, especially the right; she also has urinary difficulties. Troubles began indefinitely; has not felt well for past eight years; began to feel worse in December, weak and short of breath at times, last May had an attack of pain

in right lower quadrant lasting two to three days, apparently not related to periods at that time; was suddenly taken with an attack of inability to empty bladder; has begun to flow more frequently; has gained five pounds in weight.

Operation.—Supravaginal hysterectomy. Bilateral salpingo-oophorectomy. Appendectomy. Date Nov. 20, 1914.

Source of Material.—Uterus, tubes, ovaries and appendix; uterus was enlarged and completely retroflexed, contained multiple fibroid nodules, the largest which was on the posterior surface and almost completely filling the right lower pelvis. Large nodule measured 7 x 8 x 6.5 centimeters, solid throughout; no degenerating cavities. The uterus together with the fibroid nodules measured 2 x 2.5 x ½ centimeter, somewhat enlarged, few small cystic follicles. Appendix measures 4 x 1½ centimeters and surrounded by abundance of fat in meso-appendix. Appendix was patulous throughout, no constrictions or concretions.

Pathological Report.—Appendix negative; very cellular myoma with myo-sarcomatous change.

It is the general opinion that sarcomatous change occurring in any fibroma is the most common type of sarcoma found in the parenchymatous portion of the uterus. This appears to be borne out in the eighteen cases just cited. The usual theories advanced to explain the origin of the growths are:

1. By proliferation of the intermuscular connective tissue.

2. By proliferation of the connective tissue of the vessel walls.

3. By direct changes in the nonstriated muscle cells.

Which of these three occurs most commonly is hard to determine as often the cases are too advanced to trace the histogenesis. Some observers prefer to class that type originating from the muscle fibres (division 3) as a separate and distinct type, the change being due to a proliferation rather than a degeneration of the muscle cells. When the changes first occur the malignancy is, of course, limited to the original tumor, but as it gradually enlarges, expanding the original growth, it ultimately forms metastases through the lymph and blood channels and is quickly carried to all parts of the body. Thus we see how easy it is for those points to escape us. Only a careful, systematic microscopical examination of all the fibroid tumors removed will show the true state of affairs. Too often the tumors are not even incised and inspected even macroscopically, it being taken for granted the condition was nothing more than a simple fibroid. It is only in the early stages we can hope to effect a cure before the formation of metastases; before the degenerating area has approached the capsule of the tumor.

What is the exciting factor which brings about this change we ask. There seems as yet to be no certain answer any more than what causes malignancy in any other portion of the body. Age is no certain factor as we have shown one case of an unmarried young woman of 21 years; nor can repeated childbirth be advanced as the exciting factor. Granted we have not yet been able to ascertain the exact cause of the malignant change we may consider the next method of making an early diagnosis by making a careful study of the symptoms. The whole matter appears to come down to one fact, namely, we may not yet have been able to determine why the fibroid should occur in the first place, nor are there any set or sets of symptoms which are characteristic of beginning malignancy in the growth; consequently we can only make a plea for early attention to all fibroids in young or old. Whether they have passed the climacteric or not makes no difference. It is my opinion that the apparent scarcity of cases reported is due to the fact that the removed tumors are not often carefully examined for evidences of change. We are apt to be too well content with the getting it out to give the malignant phase a second thought. It is interesting to note that in two of the cases reported—young women—they had recovered from their primary operation and had gone to their homes. Because of the systematic careful examination of all tissue removed in the clinic, the malignant condition was discovered and the patients summoned to return for a more radical operation. One of these lived three years after the second operation. The other was feeling fine for several months following. She changed residence and track of her was lost.

In going over the ages in this series we find

3 from 21-30 years
3 from 31-40 years
9 from 41-50 years
2 from 51-70 years

The greatest frequency would seem to occur between the ages of 40 and 50 years.

In 500 cases of fibroid tumors where only the grossly suspicious areas were examined, Winter (2) found sarcoma present in 3.2 per cent. Again in 253 cases of fibroid tumors where a systematic microscopical search was made of all parts of the various tumors sarcoma was found in 4.3 per cent.

Kelly (3) found sarcomatous changes in 1.1 per cent. in 2,274 cases of fibroids.

In this series I have been unable to work out the percentage as I was unable to determine what proportion of the 6,084 cases covered were fibroid.

The possibility of mistaking a primary sarcoma for degenerative changes in fibroids has been borne in mind in this series. Three cases which were of a doubtful nature were not included, one from a young girl of 16 years; a large round celled alveolar sarcoma. Another being diagnosed from profuse curettings made accurate establishment of origin in a fibroid impossible. A third was an adeno sarcoma—probably congenital.

Tracy (4) reports sarcomatous changes in fifty-four cases out of 3,561 cases collected from various observers—1.5 per cent.

In conclusion the following points may be noted:

1. Sarcomatous degeneration of any fibroma is the most frequent type of sarcoma of the uterine body wall.
2. The frequency of occurrence varies from 1.5 per cent. to 4.3 per cent. of all uterine fibroid growths.
3. Considering the frequency of occurrence of fibroids a systematic microscopical search of the tumors removed will show a higher percentage of occurrence.
4. The mortality rate may be diminished if early operation is advised in all cases.
5. Surgical removal the only treatment safely employed.

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EMPYEMA OF THE MAXILLARY SINUS OR ANTRUM.*

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The great progress made in the diagnosis and treatment of antral disease in the past twenty years has been remarkable, but more especially so in the last decade.

There are thousands of cases in every large city which fail of diagnosis until the disease has caused systemic disturbance. How frequently we hear patients say that they have undergone treatment for catarrh for several years and are not cured; in many cases the maxillary antrum is the causative factor. Often we find persons suffering from the ill-effects of pus absorption until they have lost appetite and weight and are unable to follow their usual vocations.

ACUTE ANTRAL EMPYEMA.

In this condition we generally have a sense of fullness on the affected side, pain usually quite severe due to pressure and irritation to the nerves—generally a unilateral discharge and a dripping of the purulent secretion into the pharynx.

CHRONIC ANTRAL EMPYEMA.

Pain is not so marked as in acute cases. Tenderness to external pressure over the affected antrum, also in the region of the supra and infra orbital foramen, together with frontal and occiptal headaches and occasionally bulging of the external wall. Frequently a purulent discharge from the nose and naso pharynx. Patients frequently show symptoms of intoxication, loss of weight, anorexia, gastro-intestinal disturbance, insomnia, fetid breath, bad complexion, in fact they may present all the symptoms of a marked intoxication.

DIAGNOSIS.

Transillumination is one of the best methods of diagnosis but every means should be used for this purpose. The X-ray is valuable as it will often determine the condition at the apices of the teeth and the relative condition of the bone, also as to whether there are defective root fillings or putrescent pulps in teeth, and the presence of foreign bodies in the antrum, such as misplaced teeth, etc.

The X-ray should not always be relied on in these cases, as a false interpretation is sometimes made. By using the several methods there will be little likelihood of error.

A purulent discharge from the nose should always be cause of suspicion of antral disease, together with nausea, droppings of secretions in the post nasal region, frequently bad complexion, and a tendency to melancholy.

TEETH.

In all suspected cases of antral disease, the teeth should be given a very careful examination. It must be borne in mind that any tooth in the upper jaw when infected, may be a causative factor in antral disease. As a rule, however, the molars and biscuspids are the most frequent offenders; next the cuspids and then the laterals and centrals. The latter

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two, when diseased at the apices by abscesses, may in turn cause necrosis of the palatal antral wall. When infected in the latter case, the palate should not be opened except for immediate drainage and allowed to heal after pus has escaped. By amputation of the roots of the affected teeth, you will be able to use a curette or burr and remove all diseased tissue without making an opening into the palate. When a large incision is made in the palate and a part of the bone removed, the palate heals in an irregular manner and the topography of it is changed in a marked degree. The greater part of the palatal bone can be removed without a wound in the roof of the palate. In cases where there is a devastation of tissue, as in syphilis, of course there is an exception to the rule.

Ballenger states that the maxillary sinus is perhaps more often affected than any of the other sinuses, because in about one-half of the cases it is infected from the teeth.

Bier, of Berlin, quotes Brophy as saying that at least 85 per cent. of the antral cases are caused by the teeth. Of the twenty-eight cases that he himself treated, twenty-five started primarily in the teeth, while the other three developed secondarily to primary involvement of the frontal sinus.

McCurdy quotes Dimochowski, who, after making one hundred and fifty autopsies, held that but few cases have dental origin. And Fletcher, who had examined five hundred skulls, in which two hundred and fifty-two were found to have abscesses of the upper molars, found only twelve molars perforating the floor of the antrum and states that he has never seen a case of dental origin.

J. P. F. in his report on inflammations of the maxillary sinus, with special reference to empyema, which was based on the study of one hundred unselected skulls, examined a few hours after death, in the Autopsy Room of the Vienna General Hospital, gives the following conclusions:

First—37 per cent. of the hundred heads showed some evidence of pathological changes in the maxillary antra.

Second—Of these thirty-seven cases, two were examples of edema. Twelve were examples of chronic inflammation or empyema. One was an example of an alveolar abscess of a dental cyst. Thirteen were examples of retention cysts.

Third—With one or two exceptions, all of these cases were undiagnosticated during life.

The presence of a large amount of pus in ten out of twelve of these cases of empyema, may have played an active part in causing the death of the patients.

Dr. Walter V. Brem, of Los Angeles, formerly of the Colon Hospital, Cristobal, Canal Zone, has given an account of the post-mortem examination of the accessory sinuses, while acting Pathologist of the Ancon Hospital.

The frontal, sphenoidal and maxillary sinuses were examined in about three hundred skulls of patients who died of various diseases. Of these, about one hundred and forty deaths were due to pneumococcus infections. All cases of pneumoncoccus meningitis showed purulent inflammation of one or more of the nasal accessory sinuses.

About 70 per cent. of pneumonia cases showed the same thing. Purulent involvement was not infrequently found in other cases and chronic and subacute inflammations in about 40 per cent. In approximately 14 per cent. of the non-pneumococcio deaths, pneumococci were present in one or more of the sinuses.

OPERATION.

There are various methods of operation—the Alveolar, Palatal, Denker, Caldwell-Luc, Sluder, Kuster and the Canfield-Ballenger methods, and others. The alveolar method is often done by extracting a tooth and then opening through the socket with a burr or drill. I do not care for this method as a rule, because it is often in this way that teeth are lost unnecessarily. Further, you cannot have the best access to the walls of the antrum, and in cases of polypi, it is almost impossible to remove them in that way without an extensive opening. Of course many antra have been cured just through drainage without a radical operation. Cases of over a year's standing are generally cases of antral polypi. If a thorough operation is not done, these cases are much like the poor—"They remain with us always."

The Denker, Sluder, Caldwell-Luc and Canfield-Ballenger operations are those which require the removal of the naso-antral wall. I fail to see the advantage in removing normal structures and then having them remain abnormal for the rest of the patient's life, when the same results can be obtained without any apparent loss of normal tissue. As my rhinological friends say that the opening in the wall is to obtain drainage, my contention is that you can get all the drainage that you need from the Kuster method.

Nature did not intend that there should be a vast devastation of the naso-approximal wall, but instead, she placed the opening ostium high

up, where there would be little danger from infection. The rhinologist further contends that the oral method, is more likely to cause infection, than by the nasal route. I do not agree on that point.

Before the operation is done, the mouth should be put in as hygienic condition as possible. If oral infections involve the antrum, it is because the operator did not know the importance of oral prophylaxis or was careless, which is worse.

I have never heard the rhinologist dwell very long on the possibilities of infection from the nose, even when the opening into the antrum or the naso antral wall was almost wholly removed. In operations of this kind, you are getting as far away from the normal anatomical structure as is possible. I further maintain that the nasal route will some day be abandoned as not necessary, except in cases of acute infection, following coryza, etc.

THE KUSTER OPERATION.

In performing this operation, the anterior wall of the antrum is opened in the canine fossa. The opening should be large enough to permit the introduction of the index finger. By this method, one is able to detect any dead bone, septa or any other abnormality that may exist. A small electric light may be inserted for ocular examination. If the ostium be occluded, it can often be dilated, at the same time giving the operator plenty of space in which to work. I prefer this operation in the majority of cases.

Antral operations, at times, must be done by other methods. In cases where the bone is diseased at the antral floor, it is imperative that it be removed. If a large portion of the bone is removed, it is well to make an appliance to fit over the wound, in order to exclude food and mouth flora. An examination can readily be made in a few minutes after the bone is removed and the antrum curetted and syringed out with a warm saturated solution of boric acid. The antrum is then dried and an application of tincture of iodine combined with oil of petrogen is made to all parts of the antrum. The cavity is then packed with iodoform gauze for forty-eight hours and another application of the above is made and left for another forty-eight hours. Four or five dressings at intervals of forty-eight hours is usually sufficient. Each succeeding dressing is made smaller so as not to interfere with the granulations of the antral mucosa.

About 96 per cent. of the antral operations done by the writer, are done under local anesthesia, cocaine 1 per cent., chloretone, 6/10 of 1 per cent., together with witchhazel and boric acid. Occasionally oxygen and nitrous oxide gas anesthesia are used.

Nearly all my operations are supplemented by chloretone, by mouth, grains 15 or 20, one hour before operation, and followed by hot tea, coffee or milk. In many cases I prefer coffee for in its use we get two and a half or three grains of caffeine which is a true heart stimulant. Chloretone acts on the nerve terminals and the results obtained are satisfactory.

The opening into the antrum should be as symmetrical as possible in order to facilitate the packing with as little pain as possible.

The floor of the orbit should be carefully examined and care exercised not to use force when working in that region.

Failures often result when septi exist in the antra and are not discovered and the pus and polypi are confined behind a barrier. Nothing does quite as well as the finger in making examinations of this kind. Strong antiseptics and germicides should not be used as their irritating influences are injurious and retard granulation.

Careful count should be kept of the number of pieces of gauze used, as a piece of forgotten gauze left in the antrum, has been the cause of a second operation. This together with pieces of rubber or metal tubing or an antral plug have been the cause of irritation and suppuration and the source not discovered until a radiograph was secured.

TREATMENT.

Force should not be used in syringing the antrum unless the opening is large so that the solution can readily escape. Much harm has been done in the past by the use of hydrogen peroxide in antral treatment, especially where the antral wound is small. The peroxide coming in contact with blood and pus, immediately effervesces and through lack of exit is forced (carrying infection naturally with it) to the opposite antrum, or into some of the adjacent sinuses and secondary infection is likely to occur. It is my belief that it should not be used, as cases do better without it. In cases where the periosteum is raised from the bone, the peroxide may cause further trouble by carrying the infection beneath the periosteum.

Irrigations of saturated solutions of warm boric acid, or a warm physiological salt solution are the best agents for general use. Certain conditions may arise which call for special mod-

ification, but a mild antiseptic irrigation in my opinion, is the best method to employ.

HISTORY.

Mr. S. Age 23; was treated for antral empyema combined with necrosis. The patient and his mother called on me about eleven months ago for an examination, as there was pus present on the gums. The mother stated that he had not enjoyed good health since he was 12 years old. That he was unable to work; that he always had some slight fever; had a poor appetite and did not take much interest in things about him. He had been examined repeatedly for tuberculosis but could find no tubercle, in the sputum, neither could a lesion be found in the lungs. He was backward and shy and talked little. An examination of the teeth showed that the first molar roots were only partially filled and gave a history of an abscess about the teeth previous to being filled.

Transillumination readily showed the antrum to be diseased. An X-ray showed that a portion of the external antral wall appeared to be diseased but too much credence could not be put on this. A radical operation was done, the three molars and bicuspids were removed together with the antral floor, and a good portion of the external wall, all diseased tissues were removed. Polypi and pus were present, together with necrosis. The infection was streptococci, staphylococci and pneumococci. This operation caused a large wound which was packed every forty-eight hours for ten days, at which time an impression of the orifice of the wound and adjacent parts was taken and an appliance fitted over the cavity to protect it from lodgments of food.

Three weeks after the operation the patient had a craving for food and in a short time was eating seven or eight times a day. The great consumption of food began to tell, he gained rapidly in weight and wanted to go to work and earn money. He began to talk about things in general, something unusual for him. His facial expression changed; he had a happy manner and his color improved, and his endurance became much greater.

As above stated, this was a large wound and would require considerable time to fill in. The value of the antral appliance in excluding food is equalled by its value as an aid in articulate speech, otherwise the voice is strongly nasal. An impression should never be taken without having the antrum nearly filled with gauze, in order to prevent much of an undercut, otherwise when the wax or compound becomes hard, after a dash of ice water, it cannot be removed without much pain and in some cases this is very distressing. These remarks also apply to Plaster of Paris.

A few months ago he went to work for a real estate firm. He is making money and has a handshake that goes with the business that is well worth having.

CASE No. 2. Miss C., age 30; had complained of pain in the right temporal region for about eighteen years and in fact it had been nearly constant of late years, except when she was under the influence of opiates. An X-ray showed that all the upper anterior teeth were affected at their apices. Amputation of the roots of all the anterior teeth was attempted but diseased bone was found, which extended from the right to the left cuspid, also extending posteriorly into the palate. The six anterior teeth were extracted and all the necrotic bone removed, which extended from above the teeth nearly into the nose and a considerable portion of the palate.

The antrum was involved and an operation via the cuspid fossa done; during the operation it was found that the supporting structures of the right bicuspid teeth were necrotic and they were also removed. The culture proved to be a pure pneumococcus. An autogenous vaccine was made and an injection of 200,000,000 was given every fifth day until seven injections were given. The case went on to resolution and the patient returned home after six weeks fully recovered. I hesistated to extract her teeth as she was young and possessed a rare musical voice which she used more or less in public. There was no alternative but to lose the teeth.

CASE No. 3. Mr. B., age 50: occupation, book agent. Had been in ill health for about seventeen years; his true condition was not discovered until he had an acute attack of chronic antral empyema. His right cheek was distended and he had considerable pain. He had several attacks of intestinal hemorrhage which reduced his vitality to a marked degree, also had stomach trouble, so that he had not had a well day in many years. His physician examined his urine and found that he had albumen and casts present which continued to persist. He gave a clear history of having had abscesses about his teeth twenty years previous.

A visual examination showed that he had a marked case of necrosis. On account of his kidney lesion, I deemed it best to use nitrous oxide and remove all teeth and diseased bone in that part of the jaw. After three attempts, the operation was completed. His progress was slow, tonics were prescribed with nutritious diet. The shock was severe but in the course of two months he showed some improvement; was able to be about and to come to the office for treatment. He returned to his office and continued to improve slowly until February when he was again stricken with intestinal hemorrhage and lived but a short time after. His kidney lesion and death were no doubt due to absorption of toxic products of an antral empyema.

CASE No. 4. Miss Z, age 31; had complained of pain in the left side of the face, the second molar being tender on percussion, the first molar being absent. The region over the lachrymal duct was tender on pressure and she had occipital and frontal pains which extended along the lower eyelid toward the malar bone. The right antrum was infected by extension from the left. She had been operated on six years previously.

The gum was swabbed with tincture of iodine and a small sharp steel probe was inserted a short distance beneath the gum which revealed the fact that the bone was affected. The second molar was extracted and diseased bone removed and the antrum drained. Before the operation the patient complained of a bad odor after blowing her nose. Before coming to me she had been treated by her oculist for a year with several changes of lenses. After securing drainage she could not see well with the left eye and could not use her glasses. The

right antrum was also found to be infected from the opposite side. When perfect drainage of both antra was secured she was able to follow her vocation, that of needle work, without glasses. Later it was found necessary for her to use only weak lenses.

CONCLUSION.

I wish to make a plea to the medical and dental professions for the earlier diagnosis and treatment of these conditions, thereby saving our patients many months of suffering. By this means, many lives would no doubt be prolonged, for the writer believes that frequently deaths result directly or indirectly from chronic infection of the antrum and its secondary conditions.

A CONSIDERATION OF RECENT METHODS OF TRANSFUSION WITH INDICATIONS AND TECHNIC.

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Within recent years blood transfusion has become a rather common procedure owing to improvements in technic. The methods formerly used were difficult and required definite surgical skill as in the vessel anastomosis method of Carrel, the use of canulas as devised by Crile and Elsberg or the jugular vein method of Soresi. A great objection to these methods was the difficulty in determining the exact amount of blood transfused. The Kimpton-Brown[1] paraffinized tubes are also used with success. The technic is somewhat difficult and always necessitates a dissection of the veins of the donor and the recipient. The syringe method of Lindeman must also be mentioned inasmuch as it was a forerunner of the method largely used by us. In this method about twelve Record syringes are employed, being constantly filled with blood (20 c.c.) taken from the donor's vein and then injected into the recipient. Numerous trained assistants are necessary and the blood often clots in the syringes.

Before the Michigan State Medical Society some years ago, one of us described an apparatus for transfusing whole blood and cited cases in which this apparatus was successfully used.

We propose to describe two methods which have recently come into use. These methods are more exact and more easily accomplished than all others; namely, sodium citrate and the Unger methods.

The first or sodium citrate method was devised by Dr. Richard Lewisohn[2] of New York City, and consists in the withdrawal of blood from the donor under strict asepsis and the admixture of sterile sodium citrate 2 per cent. strength. This prevents clotting of the blood so it may be thus introduced into the vein of the recipient. Ten cubic centimeters of 2 per cent. sodium citrate are added to each 100 cubic centimeters of blood used so that the blood contains citrate in .2 per cent. strength. Care should be taken that the citrate concentration does not exceed this figure.

The next method employed, the one which we have considered better for transfusing whole blood, is that of Lester A. Unger[3] [4] of New York. This apparatus is essentially a double stop cock by means of which blood may be aspirated from the vein of the donor and injected into the recipient. Two syringes are necessary in this apparatus, one, a Record for aspiration and injection of the blood, while a Luer is used for flushing the system with saline to prevent clotting of the blood.

The advantages of these methods are obvious; they may be done rapidly, the technic is simple and can be easily acquired; one can tell accurately the amount of blood transfused. Thorough and complete asepsis is readily established as the Unger apparatus may be taken completely apart for sterilization.

Following transfusion by the citrate method, reactions usually occur. These reactions consist in a rise of temperature of two or two and one-half degrees which is of no moment. Indeed, one of us has seen marked improvement in a case following such a reaction. Reactions are rare with the Unger method. The cause of these reactions has been explained by various theories as (a) antigen-antibody combinations; (b) increased trypsin and anti-trypsin content of the blood; (c) the formation of a new protein in the blood.

The amount of blood transfused varies with the age of the patient, and the indication; 60-70 cubic centimeters for an infant, 400 to 800 for an adult. The average transfusion for an adult is about 500 cubic centimeters; excessive amounts should not be used owing to certain dangers which consist in pulmonary edema and cardiac dilatation.

1. Mason: Surg., Gyn. and Obs. Vol. 20, 1915, Page 73.
2. Surg., Gyn. and Obs. Vol. 21, 1915. Page 37.
3. Lester Unger, Jour. A.M.A., Feb. 13, 1915.
4. Lester Unger, Jour. A.M.A., Sept. 18, 1915.

The indications for transfusion are best outlined in the admirable paper by Ottenberg and Libman.[5]

A. Transfusion for simple hemorrhage in:—
 1. Gastric and Duodenal Ulcer.
 2. Dysentery.
 3. Typhoid hemorrhage.
 4. Ectopic pregnancy.

B. Transfusion connected with Surgical Operations.
 1. Preliminary to operations.
 2. Post operative hemorrhages.
 3. Shock.

C. Transfusion for cure of hemorrhagic disease.
 1. Purpura hemorrhagica.
 2. Hemophylia.
 3. Hemorrhage secondary to blood disease, as severe infections—jaundice (cholemia).

D. Transfusion for blood diseases.
 1. Pernicious anemia.
 2. Leukemia.

E. Transfusion for infection.
 1. Infection by pyogenic organisms.
 2. Sub-acute streptococcic endocarditis.

F. Transfusion for intoxications.
 1. Acute gas-poisoning, carbon monoxide, benzol.
 2. Diabetic coma.

G. Transfusion for debilitating conditions.
 1. Cancer.
 2. Malnutrition.
 3. Simple anemia.

Of the indications mentioned, we wish to emphasize the importance of transfusion in bleeding gastric or duodenal ulcers, typhoid hemorrhage and ectopic gestation. In these cases it is absolutely life-saving and should always be considered. Preliminary to operation upon jaundiced patients or where there has been prolonged bleeding as in uterine fibroids or hypernephromata, transfusion is of great benefit. It lessens the operator's risk and hastens convalescence.

Transfusion is a very useful measure in hemophylia in that it tends to shorten the prolonged coagulation time and replaces lost blood. Purpura cases are often helped. Pernicious anemia is best treated by transfusion as a remissive stage is frequently brought about, patients feel stronger, the appetite is increased and the blood picture is greatly improved. Repeated transfusions are often necessary. The chronic forms of leukemia are assisted materially; at this point we wish to speak against transfusion in acute leukemia as the condition is usually made worse and death speedily follows. Sepsis cases are frequently saved, especially the staphyloeoccus type. Illuminating gas and benzol poisoning are aided materially by transfusion when preceded by a venesection. Secondary anemia is always helped, while hemorrhagic disease in the new born is cured by a small transfusion. Cherry[6] and Langrock have shown that mother's blood may be used in the new born without the preliminary tests as there is no danger. Transfusion has been done with limited sueeess in diabetie coma.

It is of utmost importance that preliminary agglutination and hemolysis tests be done carefully with the blood of the donor and recipient before transfusion is performed as serious difficulties may result. In great emergencies one may use a parent, or a brother or sister without doing the tests but even this is sometimes dangerous. The untoward results where the tests have not been made consist in hematuria, development of jaundice, pulmonary edema, urticaria, peteeheal eruptions, phagocytosis of the transfused red blood cells by the recipient's leukocytes, convulsions and sudden death. It is, of course, important that a Wassermann reaction be made on all donors.

We wish to present a brief summary of all cases recently transfused.

1. Mrs. B. Diagnosis, Pernicious Anemia.

An Unger transfusion of 425 C. C. was done. Following the transfusion this patient felt stronger, her appetite improved and the patient walked about. This case is complicated by a pyonephrosis and will be operated. The transfusion has seemed to improve her general condition preparatory to operation. Her blood count prior to transfusion was, Hemoglobin, 40 per cent.; red cells, 1.400.000. One month later the count was practically unchanged but as stated previously, she is improved generally, which is of great importance. She will receive another transfusion before operation.

2. Mr. L. Diagnosis, Hypernephroma of Kidney.

This patient was transfused by the Unger method immediately after operation as he had lost considerable blood during the operation. His pulse immediately improved, he made a rapid post-operative recovery and his convalescence has been hastened materially. A blood count was not made immediately before this transfusion. The blood count at present is, Red blood cells 3,700,000, Hemoglobin 70 per cent. The amount of blood transfused in this case was 450 c. c.

3. Miss S. Diagnosis, Bleeding Gastric Ulcer.

This patient had repeated attacks of hematemesis, and was greatly emaciated. She could retain no food by mouth. 360 c. c. of blood was given by the Unger method. She now feels stronger, retains food by month and will soon be in condition to withstand an operation for cure of her condition. We wish to thank Dr. Naylor for permission to publish this case.

5. Ottenberg & Libman, Jour. Med. Sci., 1915. Vol. 150, P. 40-41.

6. Cherry & Langrock, Jour. A.M.A., Feb. 26, 1916, P. 626.

4. Mrs. L. Diagnosis, Sepsis of Puerperal Origin. Courtesy of Dr. G. E. McKean.

This patient has a sepsis caused by the streptococcus hemolyticus. She received 400 c. c. of blood by the Unger method. Her blood count before transfusion was; Hemoglobin 35 per cent. Red cells 2,500,000. After transfusion, Hemoglobin, 50 per cent; red cells, 3,900,000.

5. Mr. K. Diagnosis, Pernicious Anemia. Third relapse.

This patient had great weakness with dyspnea; he was quite edematous also. A citrate transfusion of 280 c. c. was done. The blood count prior to transfusion was Hemoglobin 25 per cent. Red blood cells, 1,100,000. Three days after transfusion the red blood cells, 2,200,000. Hemoglobin, 35 per cent. Since then the patient has steadily improved. His last Hemoglobin was 50 per cent.

6. Mrs. K. Diagnosis, Pernicious Anemia. Second relapse.

This patient presented the usual picture of pernicious anemia with marked pallor, weakness and anorexia. There was severe dyspnea, and the pulse was 120. Following a citrate transfusion of 250 c. c. she steadily improved, her strength and appetite returned and she is now up and about. This patient had a severe reaction after transfusion. Before transfusion the blood count was, Hemoglobin 22 per cent. Red cells, 1,740,000. After transfusion, Hemoglobin, 50 per cent. Red cells, 2,600,000.

7. Mrs. P. Diagnosis, Puerperal Sepsis.

Following the delivery of a dead foetus this patient presented the clinical picture of sepsis, with daily fever and chills. Pelvic examination by Dr. Cullen was negative. The blood count before transfusion was Hemoglobin, 30 per cent, red cells 1,800,000.: A citrate transfusion of 380 c. c. was done and was followed by a terrific reaction; the temperature rose to 106.8 degrees. Following this, the temperature declined and did not rise above 100 degrees. The patient was sent home in excellent condition, the blood count then being: Hemoglobin, 50 per cent., red cells, 2,700,00. Later the Hemoglobin rose to 80 per cent.

8. Mrs. T. Diagnosis, Puerperal Sepsis following instrumental labor of a healthy child. In addition this patient had a pleural effusion (left). The patient was in a very weakened condition and 380 c. c. of whole blood were transfused by the Freund apparatus. The condition greatly improved and was followed by complete recovery. Blood count before transfusion Hemoglobin, 50 per cent., red cells, 3,200,000. Blood count after transfusion, Hemoglobin 70 per cent., red cells, 3,900,000.

9. Child, aged three years. Diagnosis, Acute Lymphatic Leukemia.

The patient was seen in consultation with Doctors Rowland and Hoobler, 90 c. c. of blood were transfused by the Freund apparatus. Counts before and after transfusion showed no improvement.

10. Child, aged eight years. Diagnosis Aplastic Anemia.

This patient was practically moribund and 280 c. c. of whole blood were transfused by the Freund apparatus. The blood counts showed an improvement but the child continued to bleed from all mucous membranes and death followed. Blood count before transfusion, Hemoglobin 10 per cent. Red cells, 820,000. After transfusion, Hemoglobin 45 per cent. Red cells, 2,750,000.

355 Woodward Ave.

A SUMMARY OF RECENT PROGRESS IN THE TREATMENT OF CARCINOMA OF THE UTERINE CERVIX.*

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In the discussion of this subject, not more than four methods of procedure are worthy of consideration, viz; (1) Radical hysterectomy, (2) The cautery method of treatment, (3) Roentgentherapy, (4) Radiumtherapy.

Vaginal operations for cancer of the uterine cervix have largely been abandoned. Even those enthusiastic European operators, who formerly elected the vaginal route, have now, with one notable exception, namely, Schauta, given up the vaginal method of procedure.

RADICAL ABDOMINAL HYSTERECTOMY.

Freund (1), in 1878, performed the first abdominal hysterectomy for cancer of the uterus. Ries (2), in March, 1895, first described the radical abdominal operation with removal of the pelvic glands. John G. Clark (3), in April, 1895, described a similar operation, and reported a case. Rumpf, of Berlin, in June, 1895, reported an operation in which he had used the radical technic described by Ries and Clark.

Mackenrodt (4), as early as 1894, urged the wide excision of the parametria; Ries, in 1895, suggested the removal of the pelvic glands; Stimson (5), in 1889, had advocated a method of isolating and tying separately the uterine arteries; Bardenhaur (6), in 1881 had suggested the advantage of pelvic drainage. Werthcim (7) perfected the technic advocated by Ries and Clark, and adopted this technic in all of his work. He reported five hundred cases, with an analysis of two hundred and fifty operated, in which the radical abdominal procedure had been done five or more years previously. His results were as follows: sixty-three deaths from operation, seventy-eight recurrences, and one hundred and six recoveries, 42 per cent. of five-year cures. Five-year cures of other foreign operators vary from 42 per cent. of Von Rosthorn to 60 per cent. of Polossus. The im-

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mediate mortality in foreign clinics varies from 12 to 25 per cent. In Freund's and Trendelenberg's time, the period from 1878 to 1890, two-thirds of the cases operated died from sepsis or peritonitis.

Considerable controversy has arisen regarding the advisability of removal of the pelvic glands. Dr. John G. Clark (8), one of the originators of the radical method, stated in a recent publication, "We have long since abandoned the extensive dissection of lymph glands, and from personal observation of cases coming under my care I reached the conclusion, five years ago, that when the deeper iliac glands are the seat of metastases, we are merely fighting wind-mills, so to speak, in the attempt to cure these patients. Since that time it has been my controlling policy merely to remove one or two glands for microscopic examination. When a radical operation has been performed, and these glands are demonstrated to be free from cancer, the prognosis is favorable. Conversely, if metastases are found, no hope of ultimate cure can be held out." Wertheim (7) states that in forty-one of his cases in which carcinomatous glands were removed, only five were living at the end of five years. Bumm's (9) statistics are very similar. Of forty-two cases in whom carcinomatous glands were removed, three only were living after five years. Statistics of various other surgeons are in accord with these. So it appears best not to remove to any extent, at least, involved pelvic lymphatic glands. When hysterectomy may be performed without the extensive removal of pelvic lymphatic glands, the margin of safety to the patient is increased and the operation simplified.

Of all measures for the cure of cervical cancer, the radical abdominal hysterectomy is the only procedure that has stood the test of time, and today is the only method of treatment by which a five year freedom from recurrence may with any degree of assurance be expected.

THE CAUTERY TREATMENT.

Byrne (10), of Brooklyn, was one of the pioneers in the treatment of carcinoma of the uterus with the electric cautery. He reported three hundred and sixty-seven cases, with 19 per cent. living after five years, and this without any selection of cases whatsoever. Byrne emphasized the need of thorough cauterization, and of additional cauterization as often as necessary. He maintained that when cancer recurred, it practically never did so at the point cauterized. Carl Braun, of Vienna, was also quite successful with the cautery. He stated, "We lack interest in these inoperable cases because we consider them doomed from the outset, and consider our duty fully performed by giving them the benefit of one thorough cauterization. We should watch them carefully, examine them frequently, cauterize them often, and we might occasionally see a cure." The cautery method of treatment for cancer of the cervix uteri has been used by many other gynecologists, especially Percy (11), of Galesburg, Illinois, who perfected the technic to such an extent as to make its application simple and practical. By this method, cancer cells are destroyed by heat, which is regulated at a low temperature, and applied by a special method. Percy's theory is that cancer cells are destroyed by a low degree of heat, while at the same time, normal tissues are not especially affected. This method, as applied by Clark (12), of New Orleans, has converted a number of advanced cases to the operable. Clark states, that in certain of his cases, after repeated applications of the heat, the uterus became movable, the infiltration of the broad ligaments passed away, and as operative risks these cases were transformed to such a degree that Wertheim removal was made possible.

RADIUM.

Considerable disagreement exists today in the profession as to the value of radium in the treatment of uterine cancer. There was a period, about three years ago, in which a wave of enthusiasm passed over Germany, Austria, France and England as to the therapeutic possibilities of radium in the treatment of cancer. Wertheim (13) stated early in 1915, "When I was lecturing in the fall of 1914, on 'The Radium Treatment of Carcinoma,' I found out how hard it was even to try to say anything against the radium treatment. Such an enthusiasm prevailed, that anyone who dared to express distrust of radium had to expect to be criticized quite harshly."

The profession is now adopting more rational, and less confident views. Operators have found that, even with careful filtering, it is impossible to control, absolutely, the action of the radium. It is well known that radium attacks normal tissues as well as cancerous tissues, although, perhaps, not in the same degree, and many observers remark that in some instances the destruction of tissues subjected to radium had progressed so far that large sloughs into the bladder and into the rectum resulted. It has also been discovered that the effect of ra-

dium is not permanent, and that repeated treatments in many cases are necessary. Wertheim has used radium to a considerable extent, and he states that he made a trial of its use in fourteen cases, where operation was possible, and that after using the radium by the most approved methods, and allowing sufficient time for a radium cure to take place in each instance, he subjected all of these cases to hysterectomy. In twelve of the fourteen, carcinoma was found. He remarks that in some specimens the cancer cells were in an "affected condition," and that only in two instances was it possible to pass the excised uteri as free from carcinoma. He states further, "I have also directed attention to the unfavorable influence on the health in general of large doses of radium, and have shown that serious local injuries have been caused by them." And again, "In some cases we obtained surprising results. Generally speaking, however, our results have been unsatisfactory." Not considering the cases that were refractory to radium, the results obtained in other instances were only temporary. Some cases in which there were relapses after the operation, were treated again with radium rays, and these showed that in our early good results, the resistance had disappeared and an extraordinary softness of the formerly hard tissues was noticeable but a few months afterwards; and further large, newly affected masses appeared, and some deaths resulted.

Victor Bonney (14) states:

"From a considerable experience with the use of radium, my conclusions are that, in many cases, radium produces a remarkable improvement or even apparent disappearance of the growth. This improvement or disappearance is rarely of long duration. In most of the patients the growth breaks out again. I have seen no case in which, on a three years' freedom from recurrence basis, a cure could be claimed."

Flatau (15), of Nuernburg, is one of the most enthusiastic exponents of the radium treatment. I quote from his paper:

"I came to the conclusion, after using radium for one and one-half years, that cancer, in its beginning, is entirely destroyed by radium. I, personally, have not resorted to a radical operation for carcinoma of the cervix uteri since December, 1913. Without trying to be hasty in my conclusions, I can assert that the number of those who are still enjoying a healthy life is certainly larger than had I resorted to radical abdominal operation. At the same time, with the same number of cases, my average mortality following the use of radium has been 12 per cent. If radium is able to heal a large focus of ichorous suppuration in advanced cases, so that by a later investigation, proof can be found that this was the site of the destructive disease, then, we should come to the conclusion that the cure of cancer is not only possible, but sure. The inauguration of radium treatment has given to the gynecologist an entirely new method of fighting carcinoma."

Another report that runs along similar lines is that of Exner (16). Exner, for ten years, has used radium in the treatment of malignant growths, getting splendid results in the few superficial, but very unsatisfactory ones in the more extensively involved, cases. In forty cases so treated, two were apparently cured, and remained so from seven to nine years, when recurrences developed and one ended fatally. He believes, however, that the lives of all patients were prolonged, and that the majority were rendered more comfortable, but he does not aver that a cure was effected in a single instance. Cheron and Duval (17) reported at The International Medical Conference, held in London in 1914, the results of one hundred and fifty cases of uterine and vaginal carcinoma treated with radium during the previous five years. These writers believe that the unfavorable results reported in the literature were due to faulty technic. They laid particular stress upon the efficiency of large doses well filtered. In their opinion, radium given in small doses ranging from ten to twenty milligrams is worse than useless, as the remedy actually stimulates the growth. Similar reports have been given out by The London Radium Institute. Kelly and Burnham (18) reported two hundred and thirteen cases of carcinoma of the cervix and vagina treated by radium. Of these, fourteen were operable and one hundred and ninety-nine inoperable. Of the fourteen operable cases, ten patients were operated upon and treated prophylactically with radium. Of these, two have been well for more than three years, one for more than two years and three for more than six months. This number is too small, and the elapsed time too short to draw any conclusions. Of the inoperable cases treated with radium, fifty-three have been clinically cured, but the authors do not state over how long a period of time their observations have extended. Of this number, one hundred and nine were remarkably improved and thirty-seven not improved, a percentage of approximately 30 per cent. on which radium had no effect. It is only fair to mention in this connection that these authors have not selected their cases, but have taken all that applied for treatment.

Schmitz (19), of Chicago, treated thirty-six cases and he asserts that advanced, inoper-

able or recurrent cancers are ordinarily refractory towards radium rays. He advises operation followed by radium treatment. Kelly (18) recommends radical operation in cases that are operable; in borderline and inoperable cases, radium treatment. Insufficient time has transpired since the introduction of radium-therapy, to form a definite opinion as to its value in the treatment of carcinoma of the cervix. Bumm (20) claims that the limit of penetration efficiency is only four centimeters, even when massive doses are used. Other radium experts, particularly Kelly and Burnham, maintain that it is possible to radiate almost any depth with proper disposal of the applicators.

ROENTGENTHERAPY IN THE TREATMENT OF CERVICAL CANCER.

Because of the great expense incident to the employment of radium, attempts have been made to obtain good results from roentgentherapy. There appears to be little difference in the effects of the two methods of treatment. As J. T. Case (21) states, "Study of histological specimens shows no essential difference between the biological effect produced by the roentgen rays and by the rays of radium and mesothorium." Haendly (22) made histo-pathological studies of cancer tissue from uteri which have been subjected to irradiation. Haendly states: "There is a primary injury of the cancer cells which leads to disturbance of their growth, lack of mitosis and giant cell formation; the character of the epithelial cells is changed; and finally there is a disappearance of some of the cells through complete destruction. One notes a tendency for connective tissue new growth to replace the destroyed carcinoma cells. Through over-dosage, this new-formed connective tissue may become sclerotic and degenerated, as does the rest of the connective tissue. The smooth muscle atrophies and disappears almost entirely. Some of the muscle fibers show hyaline degeneration." The destruction of cancer cells by roentgentherapy has been demonstrated histologically by other investigators. This fact must be conceded. Histological findings reported by Von Franque (23) in three of his own cases that underwent hysterectomy after roentgen treatment illustrated the different degrees of change which have been described by many authors. There seems little doubt that the Roentgen treatment will be more generally used, and with the improvement in the technic of X-ray administration should come a more general use of this treatment in cancerous growths. Perhaps the most complete report on this subject comes from the clinic of Professor Bumm, who has endeavored to perfect a method of treatment of cancer by the use of the X-ray. Bumm (24) believes that eventually the Roentgen treatment will prove a very efficient substitute for radium. Indeed, he is inclined to insist that roentgentherapy will supercede radium in the treatment of carcinoma. In his opinion, a technic will be evolved that will permit of a satisfactory treatment without resulting serious burns of normal tissue. He even makes the assertion that with the use of newer tubes it may be possible ultimately to radiate these cases without the necessity of employing the vaginal method. In order to prove his theory, he subjected six women suffering from advanced carcinoma of the cervix to irradiation solely from the abdomen or back, and in two of these cases the tumor disappeared completely within a few weeks. In all instances large fungoid, freely-bleeding masses completely filled the vaginal vault. Specimens of these tissues excised for microscopic examination revealed almost complete destruction of the carcinoma cells and only a few scattered degenerated remains could be found, and these were surrounded by dense masses of fibrous tissue. In only one instance were cancer cells demonstrated. Bumm believes from these experiments, that many deeply-seated growths hitherto regarded as unfavorable may offer a hope of cure by the use of the X-ray.

Krocnig (25), of Freiburg, formerly one of the most ardent advocates of mesothorium and radium, is now using the X-ray almost exclusively in the treatment of cancer of the uterus. His present technic consists in giving these patients what he terms a thirty-hour treatment. First of all the "dammerschlaf" is induced by the administration of narcophin and scopolamine, and while the patient is in "twilight," the thirty-hour treatment is given, and is watched over by a nurse who has been especially trained.

As is true with radium, massive doses of Roentgen rays appears to be indicated. Insufficient irradiation seems to stimulate the growth rather than cause cellular destruction. Kienboech (26) states that almost every carcinoma, whatever its kind or location, may be favorably improved by irradiation, but only a comparatively small portion of cases can be so greatly benefited as to be called clinically cured.

Cancer of the uterine cervix, like cancer in all other parts of the body, is susceptible to radical removal if diagnosed sufficiently early.

All ulcerations of the cervix in women past the age of 35 are potentially cancer, and should be treated by some radical method.

If we are to increase the number of cancer cures, it is absolutely necessary to get the cases sufficiently early that the entire cancer, with all avenues of extension, may be removed in the most radical manner. Other things being equal, the prognosis will depend upon; (1) early diagnosis, (2) the skill of the operator, (3) other methods used in conjunction with the operation, such as roentgentherapy and radiumtherapy. Statistics of the best operators have demonstrated that the radical abdominal operation offers the best results of all forms of treatment for uterine cancer. The inoperable cases may be treated either with the cautery, or with radium or roentgentherapy, or by some combination of these methods.

From references quoted, it is apparent that radium treatment will give a more or less definite percentage of successes and a more or less certain percentage of failures. According to many reports from many clinics, there seems little doubt that radium possesses considerable value and probably should be used in a large number of instances. Schauta (27) asserts, "I am of the opinion that radium treatment should be used wherever operation would be difficult and when women are too feeble or are afraid of operation." Burnham and Kelly (18) state, "We are convinced that radium is of exceedingly great value in the treatment of cancers of the cervix uteri and vagina." Similar opinions have been expressed regarding the value of roentgentherapy.

It would seem that with radium and the X-ray, we have valuable additions to our armamentarium for fighting cancer. These two remedies are still in their infancy; experts are learning more and more of their efficacy and methods of administration every day. No large series of cases observed over a five-year period of time has as yet been reported, upon which judgment may be based, but radium and X-ray therapy of cancer are, however, being so extensively used that the early future will decide their value. The method used in our clinic in the operable cases is as follows: Previous to operation, one or more X-ray treatments are given; after sufficient time has elapsed, operation is performed, cautery of the cervix being done first, using the electric cautery; this followed immediately or after the lapse of a few days, by radical hysterectomy; after operation prophylactic X-ray therapy is given, using massive doses by the cross-firing method. In the inoperable cases, we are using roentgentherapy previous to operation, then the cautery treatment as recommended by Percy, this followed again by prophylactic roentgentherapy.

I would remind the radium enthusiast that approximately 20 per cent. of all cases of uterine cancer are refractory to radium. I would remind the roentgentherapist that roengentherapy will not cure all cases either; the champions of the radical cautery treatment well know that they have a large percentage of failures; the radical abdominal operation, even in the most expert hands, will not save more than 43 per cent.; in the hands of the average operator, 20 per cent. of five-year cures is the best that can be hoped for. With our present knowledge, it may be advisable to adopt a judicious combination of two or more of the above-named methods of treatment.

There is more being written about cancer in the medical press today than ever before, and the next five years will, we hope, bring more definite and accurate information, to the end that we may accomplish a greater good to a greater number of cancer sufferers.

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THE NEW EPOCH IN OUR PRACTICE.*

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This occasion invites a retrospect and a prospect. We want to look back upon what we have done as practitioners and forward upon what we may propose to do. And there are two ways of doing this: One is the personal and the other the professional. As to the first, I feel I am safe in maintaining that we have upheld a fraternal spirit and a high sense of the dignity of our calling. Without these, I am sure, we can neither have respect for one another nor merit the confidence of the laity. As to the second, I am equally sure that there are those among us who have acquired a high standing for scholarship in the medical world. We have proved that it is true among physicians, as it is everywhere else, that character is no less significant than proficiency. If the physicians of our city are achieving appreciable success, it is due to the happy mingling of earnestness and honesty with loyalty to a professional ideal. Furthermore, we are not content to be merely medical practitioners, but take part, as good citizens must, in all public movements. You can find our men active in municipal and state associations, in civic movements of various kinds, and as contributors to the literature, medical and otherwise, of the times. Our work indeed, like the windows of our offices, has a wide outlook.

And we have done a third thing, equally a source of gratification: We have been true to one another. Our loyalties have been reciprocal. The physician who does the best that is in him reaps profit, but he secures also, however intangible it may be, a gain for all the members of his profession. No practitioner can develop within the limitations of sordidness, dominated by the dollar sign. If he attempts it, he will find that these limitations will shrivel him up. Experience and expertness in adding to the general health broaden and liberalize a man and keep him fresh and human and generous and just. We have co-operated frankly and cordially because we have found good in one another and have preserved the mutual respect due from one to the other. Happy the profession that leaves a man's heart clean, keen and responsive.

And still, in the face of these facts, you will allow me to call attention to a point of view which I observe, we do not yet sufficiently recognize. We do not take to ourselves an adequate scope of influence in the domain of civic life. We still limit ourselves to the relation of physician and patient and attend to the occasional patient here and the other occasional patient there. We fail to see that health is not so much a private as it is a public concern and that our office work and our bed-side work are trivial compared with the large issues which in these days

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of ours are flung out before citizens and communities.

It does not comport with our higher obligations nor with the opportunities of modern citizenship to fill our lives with mere repair and (excuse the term) tinker work. It is not commensurate with our high calling to merely wait for and upon individuals who get into private trouble, when society demands social reconstruction and reform. No profession is so well fitted as ours for constructive work, and the public has a right to expect a great deal from us. But while many are busy in large and statesman-like movements, too many of us rest content, like the traditional pastors and parochialists of the churches, in private and little things, and wait for the larger things to be brought to us.

Medical work has attained to social significance, but it appears we are the last to realize it. As a matter of fact, we should have had the wide view at the very start, for the history of medicine is a history of the very highest conception and valuation of life. The Medicine Man of the Indians stood sponsor for the loftiest conceptions of his time. The gods were in him. Even the Christian Scientists and the New Thoughtists, however irrational their theories, are paying the physician the unwitting and grudging compliment of sublimating him to the very highest level. There is a strain of idealism in our calling which we should guard jealously lest it slip into unworthy hands, and we have a sufficiently solid sense of practicality to make us especially useful in these days which call for men of efficiency.

A nobler task than curing the sick is the prevention of disease. Our ideal should be to make disease impossible, or at least unlikely. The cause of health is a human and not a personal cause, and hygienic conditions are a democratic necessity and a democratic right, and not a luxury or a privilege. Charitologists and legislators have said so; now let us too declare it. This truth comes from us with better grace and with more force. The oath of Hippocrates was never meant to bolster up a sordid conscience; it was meant to set our faces toward the widest-scoped duty. If we are to empty our reception-rooms of the sick, we must also fill homes and streets with the healthy. We have medical law at our command, and public opinion is reinforcing it, and the average of intelligence is higher than it has ever been. Our profession, also, is better equipped, and there are more broad-gauged practitioners in it than ever before in the entire history of medicine. Both public appropriations and private benevolences are at the disposal of the cause. Everything is getting ready for the great work, only we lag behind and fail to seize the opportunity that presents itself.

The Chinese pay their doctors for keeping them well, and like true Westerners we smile at the quaintness of the Orientals and miss the point. The function of the physician is to build up life, and to arrange conditions so that nothing may disturb or interrupt it. The doctor is to send off men, as it were, on their own recognizance, to give them the discernment and the power by which they may live their lives naturally, sturdily, happily. And he can do more, because he knows where others guess; he sees where others merely surmise. He can set forth the health problem clearly, whereas others are dependent upon expedients. We have the resources at our command, the understanding, the experience, and the very atmosphere of scientific accuracy. In the final instance, all those who want to help men upward and society onward, must appeal to us as arbiters and experts. We decide what is the right air, the right food, the right home, the right occupation, the right immunity, the right hazard, the right guarantee for young, for old, for the single, for the married, for homes, for institutions, for streets, for the market, for the day, the year, the seasons, for all that makes up the diversities and manifoldness of life.

We must be the consultants in the Supreme Questions of Life. The schools cannot do without our verdict, nor can the tenement houses, the streets, parks, homes for orphans, homes for the aged, hospitals, city planning commissions, prison boards, railroads and public transportations, water boards, public hostelries, nor the other agencies comprised in a well-regulated communal or national life. In all these matters we must have a voice for consultation and in administration. Dr. Reed of Cincinnati long ago urged the creation of the post of Federal Secretary of Health, with a seat in the cabinet. But there are physicians in this country—I say it with deep regret—who have been influential enough to prevent it.

It is a truism that lives are worth something, not merely to individuals, but also to communities; that they are an investment, as it were, not only to those who have them, but also to the industries which require them; that, in fine, they are an asset to the community which it is to its advantage to invest at the highest interest. Every sick man is an economic hazard, and when he is restored to health he

is restored not only to himself but also to his trade, business or calling—in short, to his community. The community has a claim upon him and also a responsibility for him.

I am not talking of a Utopia; I am talking of facts. They are before our eyes. Medicine is being given a social interpretation, and people—employers and employes alike—are asking us to advise them how to guarantee health, for both regard health as the essential capital—its possession an economic good, the loss of it an economic evil. They demand that we help them maintain their place, their interest, and their prospect. It is an economic question, and not simply one of personal pain or personal relief; and its economic aspect extends beyond the individual, even to municipal and national welfare. Can we afford to be silent? Can we afford to ignore public demand? Shall we allow ourselves to be pushed where we might enter with enthusiasm? Shall we forget the precious advantage of initiative? The finest part of our profession is our initiative. Have we lost it and has it failed just now when we need it most?

I fear we practice medicine as lawyers practice law, or as shoemakers make shoes—efficient in certain directions and taking rewards accordingly. We follow a private calling, for which the laity is supposed to award pay and recognition. There is a by-play of commercialism in us, even the best of us, and it is our good fortune only that we have not provoked the distrust and disdain which it deserves. The layman, I suppose, is too anxious to get well to stop to think out the matter. But here and there, I suspect, some find us perplexingly businesslike and sordid. In their eyes our calling is purely commercial. So our prestige and usefulness are undermined. Of course this low estimate of the profession is all wrong. There are plenty of high-minded physicians; I venture to maintain that there are more of this class in the medical profession than in any other, and, given a chance, the low-minded are thrust out of our ranks by none more promptly and effectively than by ourselves. But as a body we have been slow to catch the modern spirit; we have contradicted our corporate ideal.

We were the first social-service men in the history of social service, but we are the last to-day. Social service is the very logic of our being. The physician who hazards his life in experimenting with a drug or an inoculation is a martyr-servant for mankind, just as he is an enthusiastic student of science; and the daily risks we take, in a world of contagion and infection, are ample proof that we are eager to serve our fellow men even though the adventure cost us our lives. Who does not remember the "city physician" or "district physician" of a generation ago? His work was largely a form of charity. The logic was this: It pays to guard the city against disease. Disease is most prevalent among the poor, and the poor are the least capable of providing medicine and medical attention for themselves. So the city must provide it. Of course it was not within the same logic that the poor had a right to medical protection, and that patronage was an offense against citizenship as much as against tactfulness. But in the days when the social interpretation of civic affairs was in its beginning it was creditable enough that something was done for the public good, however modest and incompletely thought out. I for one am proud to know that we physicians were the first to serve in the pioneer days of this social service. But a greater day is dawning for us. The sense of civic responsibility is enlarging. We know now that our obligation is not merely toward those who are overwhelmed in the struggle for life, but toward those as well who are in the midst of it. We cannot divide our citizens into rich and poor, successful and unsuccessful. The social law knows no discrimination. Every trade, every profession, every occupation has its average of health, of usefulness, and of hazard and breakdown. There is a direct relation between economics and medicine.

Disease is the most unsocial fact we have, and he who helps to remove or combat it is a useful member of the community. Conversely we can say that health is the most precious capital the community possesses, and those who help in securing it are its most serviceable citizens. Just as formerly a city could not do without its charity physicians, so to-day, in the light of our social conceptions and municipal organization, physicians should be active on all boards of public service. I know of no department of city administration in which life and health are not involved and medical advice not needed. Factory establishments are incomplete without a medical department; it ensures the vitality of the laborers, protects them against accident, and enhances their efficiency. And cities likewise must learn to furnish these. The community is responsible for the health conditions it offers to its people. Health is not a private investment; it is a public trust. The corollary to this is that the physician is a public functionary and that he must step out of his small office into participation in public admin-

istration. We have a fine opportunity in this change. We can become builders of the city life and make the conservation of health a central fact in the community. The call comes not merely to the general practitioner who can serve in many ways, but to the specialist no less, for modern industries cause breakdown according to the organs which are endangered in specific employments. Modern sociology speaks of life value according to hazards, sanitation, food supply, and the rest. The kind of water, air, meat and milk a town gets fixes its health. When the town does not secure them, doctors are busy. Something is wrong with a town where doctors are busy. This statement may sound paradoxical, but it is such only because we have not grown up to its truth. Like teachers, doctors have achieved their best when they cease to be needed. Health is the essential of life, and we are derelict when people, barring accidents, do not possess it and cannot hold it.

Medicine must become municipalized and nationalized. The day may be far off, but it is coming, when we shall organize health conditions as we organize political, economical, and all other social conditions. We are familiarizing ourselves with that view, day by day, more and more. Every reform is approximate, but the progress is on. Our hospitals are already public institutions. The problem of our orphan asylums is intimately connected with the problem of public health (tuberculosis, etc.), laws of marriage and divorce, and the laws and conditions of employment. Our insane asylums have a direct relationship with home and labor conditions; and so on. We have been hearing the expert testimony of lawyers and statesmen. Now let us have the no less reliable diagnosis of the doctor, who, too, has something significant to say on the social good and the social evil. The demand for it has come through pressure from without; but its real force will come from within, from the higher consciousness and the competence of the physicians themselves. A profession is genuine by so much as it feels the social call and its social usefulness, and the medical profession is beginning to feel and to respond to both.

MERCURIC CHLORIDE POISONING. CASE REPORTS—SYMPTOMS AND TREATMENT.

LEO JOHN DRETZKA, M.D.
Resident Surgeon, City of Detroit, Receiving Hospital.
DETROIT, MICH.

The strange imitativeness that actuates victims of depression who contemplate suicide, together with frequent newspaper references to mercuric chloride as a means of self destruction, have caused a great number of persons to select this stubborn, slow-working and painful poison in attempting to end their lives. Like carbolic acid, mercuric chloride is a common disinfectant and is often accessible to those suffering with acute melancholia. Many influential dailies no longer mention the poison used by persons committing suicide. This is a commendable policy. Meanwhile public hospitals, city physicians and general practitioners are frequently confronted with the problem of arresting the action and eliminating from the system this dangerous drug.

It is the purpose of this paper to review a regime which has proved invariably successful in cases which are in some degree hopeful. Conclusions are drawn from the observation of fourteen cases in the past eight months, six of which are cited in this paper.

Symptoms of poisoning appear almost immediately after the drug is taken. The primary symptom in every case seems to be abdominal distress combined with an extreme empty, nervous feeling. Shortly this is followed by pain in the epigastrium, which soon becomes general. Nausea and vomiting of the gastric contents is present in every case, often this is blood-stained. The stools, in the six reported cases, also showed evidence of blood. Diarrhea is usually present. Case (2) had constant involuntary bowel movements continuing for four days. Complete anuria is a common symptom during the first twenty-four hours. No convulsive seizures are, however, present as in uremia. If the kidney function is actively re-established the patient invariably recovers.

The length of treatment varies with the individual case; the character of it, however, is practically the same in all cases. The stomach contents are expressed and sent to the laboratory; then the stomach is thoroughly washed and the lavage water also examined. Through the stomach tube whites of several eggs are given together with three ounces of glycerine. If nausea continues the lavage is repeated in one hour.

The colon is irrigated three times daily.

Normal saline—intravenously—500 c. c.

Hot packs are given morning and night.

Proctoclysis is given continuously.

The patient is given, every five hours, one dram of the following mixture:

Tincture of buchu	1 ounce
Spiritus etherus nitrosis	2 ounces
Potassium acetate	2 grams

Urotropin 2 ounces
Elixir simplix 4 ounces

Diet consists of whites of eggs, milk and egg nogs.

The urine, voided or catheterized, specimens are sent to the laboratory daily. When it is found negative in three successive examinations treatment is discontinued.

Case 1. L. A., age 23, colored. Admitted June 18, 1916.

One hour before admission patient swallowed two grains of mercuric chloride tablets. No treatment before entering hospital. Abdominal pain began within one-half hour followed by vomiting; severe bowel purging; stools bloodstained.

Laboratory.—Stomach contents, urine and stools all negative. Abdominal pain disappeared second day. Patient discharged the fourth day.

Case 2. H. J., age 35, colored. Admitted Feb. 6, 1916.

Two days before admission patient swallowed fourteen mercuric chloride tablets with suicidal intent. Patient in semi-comatose condition; mouth foul, heavy sordes on teeth and entire oral cavity coated; tongue coated and thick; face very much swollen; congestion of tonsils and pharynx. Profuse salivation. Complete anuria. Vomitus green and blood streaked. Stools bloody.

Twenty-four hours after admission patient's condition improved. Scanty amount of urine passed at intervals beginning fourth day. Perspired freely after packs. Eighth day became unconscious. Died two days later. Stomach contents, urine and stools all give positive evidence of mercury.

Case 3. L. F., age 21, white. Admitted June 20, 1916.

Prior to admission patient swallowed two grain tablet of mercuric chloride, burning pain in stomach began almost immediately. She took a glass of milk and came to the Hospital. Gastric lavage was given (examination disclosed mercury). Amount of urine normal and negative, stools normal and negative. Patient left the hospital two days later and is well.

Case 4. W. G., age 44, white. Admitted Nov. 28, 1915.

Had taken four grains of mercuric chloride by mistake, thinking it was calomel. Severe abdominal pains began almost immediately with nausea and vomiting, and he was brought to the hospital. Gastric lavage and urine examination disclosed mercury. There was no salivation or foul odor. Stools were negative. Amount of urine increased daily with negative report after twenty-four hours treatment. Patient discharged five days later.

Case 5. H. L., age 26, white. Admitted October 23, 1915, one hour after taking eight mercuric tablets with suicidal intent. Patient in semi-conscious condition and delirious. No other history obtainable. Vomitus and gastric lavage show evidences of mercury. Suppression of urine for twelve hours. Examinations were negative at the end of the seventh day. Regained consciousness twelve hours after admission, much salivation and foul odor. Discharged nineteen days later.

Case 6. C. W., age 22, white. Admitted Dec. 11, 1915.

Admitted two hours after he had swallowed about twenty small Berney's tablets. Burning sensation in gastric region began almost immediately; then nausea and vomiting. Tongue and oral cavity coated and foul odor present. Stools blood streaked. Suppression of urine for twenty-four hours. Gastric lavage was positive to mercury test as was the first specimen of urine. Subsequent examinations were negative. Patient discharged ten days later.

THE TUBERCULOSIS SURVEY AS I SAW IT.

J. D. Dunlop, M.D., C.M.
ALPENA, MICH.

The much and widely heralded Tubereulosis Survey commenced in our Court House on Tuesday morning, Sept. 26. Personally, I did not know what methods were employed by the physicians and their staff of nurses to obtain immediate findings either for or against the presence of the disease, at any rate in its incipiency. I found that the examinations were made with extreme thoroughness though no new, or comparatively new, means were used, except rarely the Calmette and von Pirquet tests.

As the examiners came a day sooner than advertised they were almost that time at work before I knew of their presence in the city. Being intensely interested in their coming I went to the Court House although it was well towards the end of the afternoon. The arrangement of the building, with its large comfortably seated hall, numerous small rooms, stands, desks, etc., chanced to be an ideal place for the accommodation of the large number of people waiting to be examined as well as for the physicians and nurses in charge.

We have not a large city nor a populous county and the latter is dotted with villages where members of the Survey were at work so that the number of people in our Court House when I went in quite surprised me.

I walked up one of the aisles and stood for

a moment looking into their faces. Few were new to me and all bore a look of intense interest and concern.

In front of the railing which separates the auditorium of the court room from the large space which is set apart for the Bench and Bar, or court proper, the numerous tables, arm chairs, and even the Judge's Bench itself were occupied by patients, and quiet earnest nurses taking histories, temperatures, and counting heart beats. Behind screens other nurses were lending their aid in the disrobing and preparation of patients awaiting their turn for examination. In rooms on either side were the examining physicians busily at work attempting to dig out every sign, every symptom, every mite of history and pathological entity that might in the remotest degree have a bearing on conditions of the past or what at present existed in the chests before them. All, that with reasonable certainty, an outline for the future might be made; and directions given that would be of lasting benefit to the individual, his immediate family, and in fact, to the whole community.

The gathering was not a jolly one. As the sun was dropping behind some tumbling autumn clouds he shot shafts of light across the faces in the waiting room and those faces reflected back the silent musings of the anxious spirits at work within.

Old and young business men, artisans, and laborers—some robust looking, some exhibiting telltale signs—sat wondering what their sentence or the sentence on some relative or friend would be. Comfortably dressed, also smartly dressed, women and girls touched elbows with others in patched and frayed clothing that was anything but smart or fitted for the shrinking hectic creatures within them; but all were on the same level, the same mission; all awaiting a positive or a negative verdict or sentence; and nothing could be nearer a real sentence, or a complete and assured freedom than the expressed prognosis of the doctors as they ended their search for the presence of that death dealing entity—the bacillus tuberculosis.

As the physicians spoke the inspiring words that indicated a freedom from disease, or assured the unsettled mind of an emphatic response to wise actions and correct living the effect was magical, the transformation from solemn dubiety to joy, most unmistakable. On the contrary, a few kindly hints with the bitter meaning of an indefinite hopeless misery or fast approaching death created a shock that held out to all present the mighty meaning of this odd gathering of sick and well, demonstrating to everyone present the far-reaching effects, also the benefits that surely will come from our Statewide Tuberculosis Survey.

I had heard the survey idea and its objects dubbed all sorts of things from a wild dream to political bunkum; and those who took part in it more or less a bunch of pleasure seekers abroad in the state spending money that belonged to the "dear people" as well as interfering with their constitutional rights and personal liberties. Even members of our profession openly doubted the practicability of the scheme; but now in Alpena, at least, the physicians and public alike join in the highest encomiums of the real interest awakened and the work done.

It was refreshing to note that no pretences were made to do impossible things nor that anything mysterious or very unusual was being done. Simply an earnest endeavor on the part of a corps of trained men and women to arrive at and impart the truth by the best methods known to medical science. I am not a novice at chest work myself so feel reasonably competent to judge, and I am stating but plain facts when I say that from the falling of the patients into the hands of the kindly and thorough going nurses to the final word of the examining physician every action was taken and every move made with the utmost care and deliberation—all with a spirit of keen interest in the difficult problem of making a correct diagnosis. No claim of perfection was even hinted at and the doubtful were marked as such. The instructions and warnings given this class alone, in our community, were in my opinion worth fully one-quarter of the entire state appropriation and who can tell the real limit of the benefits that may accrue in the future?

The cure of the curable and the arrest of the disease in others are tremendous factors but both sink into insignificance when compared with prevention. And how is prevention going to be brought about without discovering the individuals who are the innocent sources of the disease: then protecting their relatives and

friends as well as the public from them? In many cases, indeed, protecting them from themselves; and in all cases providing means for the care and, if possible, cure of the afflicted. In all of this the work of the Survey stands out prominently and while that fact was forcefully brought out here another was also demonstrated; viz., that the people are rapidly awakening to their own needless sufferings. They are asking questions and as near as they can obeying instructions. They are trying out what to them are new ideas and principles. They are listening and looking with bated breath and searching eyes for every atom of knowledge and ray of hope that is within their reach. I believe there is hardly a family, either in itself or in some of its ramifications, that has not been fatally hit by tuberculosis and this with the unthinkable misery and suffering is now being made to pass from the "dispensation of Providence" idea to the realm of common sense, cure, and prevention.

At a meeting of the Alpena County Medical Society held on Thursday evening, September 28, at which all the members of the State Survey were invited guests, it was decided to hold a free diagnostic clinic once a week to be conducted by local physicians assisted by our capable visiting nurse. Since that time the clinic has been held under the auspices of the Board of Health and the number applying for examinations and instructions has been greater than could be taken care of by several examiners in the time allotted. At a meeting of our board of supervisors on October 13 a hospital for tuberculous patients was pleaded for with the result that by unanimous vote a resolution was passed signifying the need of such a place and appointing a committee with full power to act —and that means a suitable sanatorium for the care of such cases in Alpena county in the very near future.

The State Survey did not do this but it paved the way, stirred up the people to a realization of their condition and their needs and backed the local physicians so that it was all brought about. If the Survey is doing a like work all over the state and its efforts are supported in the same manner the name of Michigan will be written in letters of gold across the scroll of all time; for, "every tree shall be known by its fruit."

Hydras.—The Council on Pharmacy and Chemistry reports that Hydras, sold by John Wyeth and Bro. is one of the so-called "uterine tonics," said to contain "cramp bark, helonias root, hydrastis, scutellaria, dogwood and aromatics" in unspecified amounts. While the name, taken in connection with the composition, suggests that hydrastis is an important constituent, the A.M.A. Chemical Laboratory found this drug to be present in unimportant amounts. The Council finds Hydras inadmissible to New and Nonofficial Remedies because its composition is semi-secret; because the recommendations on the label for its use in specified diseases, and the advertising accompanying the bottle are sure to lead to its ill-advised use by the public; because the claims made for its curative properties are exaggerated and unwarranted; because the name is misleading and because the combination of these five drugs, even if individually they were of therapeutic value, is irrational (*Jour. A.M.A.*, Oct. 7, 1916, p. 1107).

Patent Medicines Prosecuted under the Food and Drugs Act.—The following information was brought out in connection with prosecutions by the federal authorities under that portion of the Food and Drugs Act which provides penalties against misleading, false and unwarranted therapeutic claims: Radway's Ready Relief was claimed to relieve rheumatism, sore throat, pleurisy, pneumonia and other conditions. The government chemists found the preparation to be a hydro-alcoholic solution of oleoresin of capsicum, camphor and ammonia. Ingham's Vegetable Expectorant Nervine Pain Extractor was found to contain alcohol 86 per cent., opium alkaloids, camphor, capsicum and vegetable extractive matter. It was claimed that this morphine mixture was not only safe and harmless, but positively beneficial when given to teething children. Tetterine was said to be a marvelous remedy for tetter, eczema, etc. Maigmen Antiseptic Powder according to the government chemists is composed essentially of calcium carbonate, borax, aluminum sulphate and sodium carbonate. Among other things the exploiters of this powder, which at one time was advertised to the medical profession, tried to persuade the public that the preparation would "sterilize" the stomach, throat, nose, lungs, etc. Green Mountain Oil or Magic Pain Destroyer was found to consist essentially of 95 per cent. linseed oil, with oil of sassafras, oil of thuja, and oil of turpentine, with possibly small amounts of camphor. According to the claims made on the trade package, this stuff was said to be "A Remedy for Diphtheria, Croup, Deafness and Sore Eyes, Rheumatic Pains, Stiff Joints, Pains in the Back" and many other ailments. Mrs. Joe Person's Remedy was found to be a slightly sweetened water-alcohol solution of vegetable drugs with a minute trace of alkaloids and the presence of podophyllin and sarsaparilla indicated. The preparation was claimed to cure such things as "blood poison," eczema, malaria and pellagra. Tutt's Pills were fould to consist mainly of sugar, aloes, starch and calomel. The nostrum was sold under claims to the effect that it was "a remedy for intermittent and remittent fevers, dropsy, dysentery, diseases of the kidneys and bladder," and a number of other conditions (*Jour. A.M.A.* Oct. 28, 1916, p 1316-1317).

The Journal
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December

Editorials

GREETINGS.

"In lowly hut and palace hall
Peasant and king keep festival,
And childhood wears a fairer guise,
And tenderer shine all mother's eyes;
The aged man forgets his years,
The mirthful heart is doubly gay,
The sad are cheated of their tears,
For good-will and peace, peace and good-will
Ring out the carols glad and gay."

The unobstructed march of time once more brings before us that season of the year that causes us to slow-up for a moment, forget the distant goal and induces one to pause and participate in the festival celebrations. It is the season that arrests the activities of all, from peasant to king, from infancy to age—to each there is given a participating part. True some may have greater reasons for joy and celebration, while others there are who are passing under a cloud—still upon all there will be reflected the holiday spirit.

So to our members and readers *The Journal* extends the heartiest greetings of good cheer and good wishes and extends its salutation to all for a Merry Christmas and a Happy New Year. May the season of celebration vouchsafe to all a period of unalloyed bliss and happiness.

INDUSTRIAL SURGERY.

The principles of industrial surgery are daily becoming more and more established. Fundamental axioms that are proven essential for one to possess when attending cases of industrial injuries have been determined. Methods of procedure are definite in given conditions. The work has become to be a distinct specialty.

In view of which we believe and are firm in the opinion that our University and the Detroit College of Medicine and Surgery might well and profitably arrange so that its senior classes might secure the benefit of a series of lectures and clinics upon this subject. The Summer Course of the University might also incorporate a post-graduate course in this subject so that practitioners might avail themselves of it and be better prepared to care for this class of patients. We are sure that this suggestion merits the attention of our Educational institutions.

A MESSAGE TO THE COUNTY MEDICAL SOCIETIES.

In 1902 under the re-organization plan of the American Medical Association the membership of the State Medical Society was enlarged by the re-organization of the existing County Societies and the formation of others, so that every County in the State has a society of its own or one in affiliation with adjoining counties; to which membership every eligible physician is invited. This plan required the earnest thought, devotion and efforts of the officers and members of the local and state organizations and much credit is due them for their untiring labor. The machinery is now so perfected that with small attention it runs itself with but little friction. It would be wrong, however, to assume that with the machinery in good running order the work of the members is simply of a routine character. During the last decade there has been a vast awakening of the public to medical problems and the relationship of the public to the profession has undergone great changes. In many things the laity has taken the initiative and in many undertakings the value of the physician as a force in their successful working has been unappreciated or deliberately ignored. One needs to refer only to the Workmen's Compensation Acts, to Social Insurance, to Health, Sick and Accident Insurance, to lodge practice, to housing conditions, to the examination of children in the public schools, to the relation of hospitals and dispensaries to the public, to the examination and

care of the thousands of employees in the large manufacturing centers, to public health matters in general, in all of which the profession is vitally interested and in reality must be the principal actor to command success. Whether as individuals we believe and welcome these changes matters little. Social and economic conditions demand them and it behooves us to see that our interests are safe-guarded; namely that the dignity of our calling is upheld and that our reward is such that proper services may be rendered the sick. The moment that in normal times the services are so exacting and unremunerative that proper service cannot be rendered or the health of the community cannot be safeguarded that moment the relation of the physician to the patient and the community is improper. Again it behooves us to enter into an intelligent discussion with the public in all these important questions. The physician by education and training is the proper educator and should have a deciding voice in all affairs which affect the health of the community. I know by my work as a member of the State Board of Health that the laity welcomes this instruction and, therefore, as your President, urge upon you as members to get into closer touch with your community through the press, in the pulpit and on the platform, that the social improvements needed may not fail for want of earnest and intelligent cooperation.

Most of the County Societies meet this or next month in annual session. There is in the suggestion outlined, I trust, much food for thought and much more for action during the approaching year.

Andrew P. Biddle.

SOCIETY PROGRAMS.

The program that will hold the interest of our members, in my judgment, must be one that lends the greatest possible help towards the solving of the problems met with in every day practice. Concise and carefully prepared papers, together with a full and general discussion of the subject of the papers read, will in all instances bring out clinical suggestions and clinical helps to every practitioner present.

Papers arranged correlatively as a symposium on e. g., "Diseases of the Liver," "Diseases of the Gall-bladder and Bile Ducts," "Diseases of the Circulatory System," "Diseases of the Blood and Ductless Glands," Diseases of the Respiratory Organs," "Diseases of the Kidneys," etc., and on Obstretrical and Gynecological subjects, will prove more helpful and interesting than will papers on subjects selected at random and at the whims of the authors. I am of the opinion that it is far better to have a program for the entire year compiled by a committee selected for that purpose and printed copies of same made and distributed to all members, thereby relieving the president and secretary of a considerable trouble in drumming up members for papers, allowing the members to know in ample time the topics assigned to them, and affording every member an opportunity to look up any and all subjects he chooses to better inform himself upon.

If we adopt this course I believe we are certain to have fuller discussions of the papers read and this, we all realize, is a great factor in cementing the good fellowship and in aiding the welfare of the local societies. In this way the efforts of members are towards a mutual helpfulness and any disposition to "star" by springing unusual and intricate subjects will be overcome. Of course, we wish to have all interesting and unusual matters that arise in practice brought to our attention, and provision is made for this in the "Order of Business" of the meeting, under "Clinical Cases."

The longer we are in practice the more readily we recognize the value of often repeated reviews of the anatomy, the histology, the physiology, and the functions of all parts of the human machine before we take up the pathological conditions and consider their treatment, so we can most profitably include papers on these subjects in our symposiums. A continuous routine of solid papers is very apt to become more or less tiresome and monotonous and some method of overcoming this wearisomeness may well be considered. Probably nothing better can be done than to have occasional "get-together" luncheons and smokers, either at the regular place of holding the meetings, or else at the homes of the members, where the practitioners may become better acquainted, enter into closer friendships, and where sociability and good fellowship will abound. To insure against disappointment by not having any paper read at a regular meeting, should an essayist of the evening find it impossible to attend, we believe it is well to have two papers on the program for the evening, and where members from the outlying districts and from towns adjacent to the one in which the meetings are held are on the program it may be advisable to have two papers by resident practictioners, in addition to that of the nonresident member, for the

same evening. Lastly, it is within the power of the president of the society to add greatly to the interest of the program by being tactful in securing full and general discussions of the papers read, for the biggest thing on the program is "a full and general discussion."

R. C. WINSLOW.

SEASON GREETINGS.

"With hopes for a larger and more closely united Michigan State Medical Society, in which the Thirteenth District is eager to do her part, I extend the season's greetings."

F. C. WITTER,
Counselor Thirteenth District.

TO THE MEDICAL PROFESSION OF THE SIXTH COUNCILOR DISTRICT.

Without health, inherited and maintained, no full degree of happiness and well being can come to any man. Strong, robust, physical and intellectual health is the greatest asset of men and of nations; yet how pitifully is that God-given fortune broken, wasted, and dissipated to nothingness. And why? Ignorance of right ways of living is the answer.

These are the days of the "efficient expert" who teaches how to do things right. The Medical Profession must be the efficiency expert, to teach men how to so live that their lives may be happiest and most productive of all that is worth while, vouchsafing to unborn generations strong minds in strong bodies.

With our mission clearly in mind individually, we can, through organization and co-operation, hold front rank in the Army of Progress. This is our work of real "Preparedness;" and may the New Year be to you and to all of us, one of happiness through achievement in this line of duty.

Sincerely and fraternally yours,

ARTHUR M. HUME,
Councilor Sixth District.

Lapeer, Mich., Nov. 13, 1916.

In answer to your letter: The thing that comes most prominently into my mind is, Better County Meetings and how to make them so. Every society may have a special cause for its sickness and require special treatment, but there is no one thing that will enliven it and enthuse the members like meeting often.

From our experience in Lapeer County I am convinced that if the Society meets on a three months schedule it is a hopeless task to keep it from dying a slow death and this would be equally true of a society in a city that met only once a month.

This summer, in Lapeer County, we have tried having a meeting every month. With one exception we have had a good attendance and the members are enthusiastic over it. We will have a mid-winter meeting and begin again in April to have our monthly meetings. During the first three months of the year our Secretary will—as he did last year—have made arrangements for our whole summer's program. It is just as easy to do this at once as to do it piece meal. It looks better and the effect is good on the membership. They know what the program is and that it has been arranged for long enough ahead that there is not likely to be a disappointment.

The mid-summer and mid-winter meetings should be of a social nature. The mid-summer a picnic and the mid-winter a banquet followed perhaps by a dance. I believe there are a lot of Doctors' wives who would enjoy renewing an acquaintance with the old time pleasure of dancing and I am sure there would be no question about the daughters enjoying it. My experience has shown me that wives take a deep interest in the society and retain it longer than their husbands, and if you give them opportunity to be present by having a social meeting Mr. Man will have to come along no matter how many excuses he makes.

Meeting once a month in different towns in the county is no hardship in these days of automobiles and judging from our experience in Lapeer County these suggestions will be found "good medicine" for the society as a whole and especially the officers who strive for a good live society and are often disappointed.

Wishing all our members and especially those who labor for the common good a Merry Christmas, I am

Yours Fraternally,

W. H. KAY.

Editorial Comments

The Indiana State Medical Society at its annual October meeting raised its state dues to $4.00 per annum. It was also determined to employ a full time secretary and business manager, to induce greater organized activity and

to protect the interests of the members in legislative and civic affairs.

New advertisements in this issue. Our members and readers attention is called to them with the earnest appeal that the opportunity be utilized to cause these business firms to realize upon their investment in your publication. It is impossible to maintain a high standard if you do not exert some effort to cause advertisers to realize that this publication is a valuable medium for reaching the profession of Michigan. Write to them to-day.

The index for this volume is contained in this issue. We have endeavored to eliminate errors and to make it all that the term stands for.

The "Fee-Splitters" attempt to organize has been cleanly exposed by the *Missouri State Medical Journal*. The effort was made to form an organization of American doctors with an advanced object of scientific investigation. The disguise was penetrated and the basic purpose of the organization was shown to be composed of individuals—not men—who brazenly barter in human lives for the sake of financial profit.

The American College of Surgeons has appointed a Committee to visit South America to inspire a closer professional relationship between these two American provinces. It will undoubtedly be a junket of pleasure, hardly called for. There are pertinent problems in our own midst that should receive attention before stepping beyond our geographical boundary.

Our Committee on Public Policy and Legislation has arranged to keep informed as to proposed legislation that will be presented to this winter's session of the Legislature and which has a bearing on health and professional interests. County Societies are requested to appoint local committees to co-operate with our State Committee. When such appointments are made it is desired that the name of the Chairman be sent to the State Secretary so that they may be promptly communicated with whenever necessary.

Bay City has extended an invitation to the State Society to hold its 52nd Annual Meeting in Bay City. The Council, at its January meeting, will determine the time and place for the holding of our next annual session.

The American Association of Anesthetists has addressed to the Michigan State Board of Registration in Medicine a request that the Michigan law be enforced to prevent a nurse from acting as an anesthetist. The *Journal* greatly desires to receive a discussion of the subject by those who have an opinion for or against a nurse acting as an anesthetist.

AMERICAN COLLEGE OF SURGEONS.

Annual Meeting of the Fellows Held in Philadelphia, October, 27, 1916.

The purposes, the actual work, and the plans for the future of the American College of Surgeons were so definitely brought out at the recent annual meeting of the Fellows, held in Philadelphia, that the following condensed report of the meeting is of interest. Only such matters are here included which are of general interest to physicians and surgeons.

George W. Crile was elected President of the College and Chairman of the Board of Regents, to succeed Dr. J. M. T. Finney who had served the College in this capacity since its inception. Rudolph Matas was elected First Vice-President, and Robert G. LeConte Second Vice-President. The Board of Regents as now constituted is composed of George E. Armstrong, Montreal; Henry S. Birkett, Montreal; George E. Brewer, New York; Frederic J. Cotton, Boston; George W. Crile, Cleveland; J. M. T. Finney, Baltimore; William D. Haggard, Nashville; Edward Martin, Philadelphia; Franklin H. Martin, Chicago; Charles H. Mayo, Rochester; Robert E. McKechnie, Vancouver; Albert J. Ochsner, Chicago; Harry M. Sherman, San Francisco; Frank F. Simpson, Pittsburgh, and Charles F. Stokes, Warwick.

Report of the Director—John G. Bowman.

Three years ago Sir Rickman Godlee brought to the Fellows of the American College of Surgeons the greetings of the Royal College of Surgeons. On that occasion Sir Rickman said that he would give us ten years in which to get our organization under way. On this occasion it is my privilege to report to you the workings and progress of the third year of that task.

This is our annual meeting. It is a serious occasion on which we pause and look backward and forward. It is an occasion on which I beg that each of you will hold an annual meeting with yourself as well as with one another: for however perfect the machinery of the College may be, that machinery will never take the place of character, of leadership, and of that something we call affection. Trust, co-operation, and constructive inspiration, are the things which in the end make for success. These are the things which must stir in the hearts of each of us if collectively we are to accomplish great work.

This report now will touch chiefly upon two subjects: First, the admission of Fellows to the College; second, the investigation of hospital conditions.

ADMISSION TO FELLOWSHIP.

During the past year about 200 Fellows have been admitted to Fellowship. These 200 Fellows were selected out of about 2500 applications for Fellowship now on file. Of the 200 admitted about one-half submitted case-histories as evidence of their qualifications in surgery. We have now enrolled about 3700 Fellows.

Quite beyond the realization of most of the Fellows, the policy of the Regents is to admit only those surgeons who beyond all reasonable doubt are competent and honest. On the other hand, the Regents propose definitely to invite all surgeons to Fellowship who meet these qualifications and to sift away all personal prejudice in making their decisions.

Some details of the process of admitting Fellows may here be of interest. In each state we have a State Credentials Committee of from five to nine members. These committees are elected by the Fellows of their respective states. All applicants for Fellowship from a given state are then submitted to the State Credentials Committee concerned. Service on this committee is a serious trust. The committee is asked to pass upon each candidate, having before it not only the data obtained by the central office, but also the data obtained at its own initiative. Each committee is asked, further, to give its reasons for its decisions.

After action has been taken by the State Credentials Committee, the applications are then reviewed by the Central Credentials Committee which meets about every other Monday evening at the offices of the College. When a candidate is approved by his State Committee and by the Central Committee, he is then privileged to submit one hundred case-histories (as outlined in Bulletin No. 1) as further evidence of his qualifications. But he is not given this privilege unless there is abundant reason to believe that he is qualified.

In the judgment of the Regents these case-histories are proving to be a very genuine test of fitness. The histories, when properly recorded, make clear the data on which each diagnosis is based; they make clear the physical findings, gross and microscopic, and the laboratory analyses. The family history and what happened at the operation and the end-results are also important factors.

During the past year about 60 per cent. of those who submitted case-histories failed of final approval. This large percentage failed because the histories were incomplete or because the diagnoses were not based on sufficient evidence, or because, having the evidence, the diagnosis indicated lack of good surgical judgment. These failures, however, do not necessarily mean that the candidates are rejected for all time. In some instances, where success was nearly attained, the candidate may try again. In other instances the candidate may try again only after submitting satisfactory evidence of additional preparation for the practice of medicine and surgery. The Committee on Examinations makes a written report upon each case together with its recommendations.

In all of this work comes a large human element which cannot always wisely be subjected to arbitrary rules. Time does not permit now of illustrations. But let me say that the care and fairness with which each case is considered has been to me a constant inspiration. Few of you, I am sure, realize how much effort goes to make up the final decision of the Regents. The Regents know that their trust to you is to make these final decisions right.

INVESTIGATION OF HOSPITAL CONDITIONS.

The actual contact of the College, it seems clear now, will come not only with the profession, but also with the general public through our proposed work among hospitals. This work is not merely something which we may do; it is something which we must do. It is our business to know what real training in surgery means. That has been obvious to all of us from the start. And it is a true estimate, I believe, to say that 80 per cent. of what a surgeon uses in practice he acquires during his interneship and hospital training. In other words, the particular training ground for the surgeon is the hospital. Forced upon us, then, is the obligation to know what this training ground is, and what kind of a standard we should hold up to ourselves as the proper training of a surgeon in a hospital. Further, the problem of the training of a surgeon in a hospital cannot be isolated as a separate factor of the hospital's program. We cannot say that here the training of the surgeon begins, and that there it ends, for the training of the physician is also largely the training of the surgeon. The problem involves us in the whole question as to what is the proper care of sick people.

There are specific divisions, however, in every hospital which we may investigate, and, having accurate data, we may point the way of progress. For example, what is the condition of the case-histories of a given hospital? Are they complete? Are they accessible for study and future guidance? Are end-results followed up with conscientious common sense? Are summaries of these results made public as evidence of the competence of the physicians and surgeons practicing in the hospitals?

We may ask, further, what the conditions are of the hospital laboratories. Important elements in the training of the surgeon are that he know how to use the laboratory, and that he form a habit of using it. What are the laboratory facilities which a hospital of a given number of beds may reasonably be expected to provide? Are the laboratory findings made a part of the case-histories? Does the pathologist make a permanent report of his exact findings? To whom are such reports made? Do the

superintendent and the trustees who are responsible for the government and the administration of the hospital take pains to assure themselves that the work of the laboratories is competent and that reports of findings are fearlessly set down?

This last question leads to the whole problem of hospital administration. We cannot avoid it. What is the relation of the Board of Trustees to the medical staff? Or to the hospital superintendent? In passing, let me say that it is the business of the superintendent to carry out the directions of the Board of Trustees. He should be told what kind of a staff is privileged to practice medicine and surgery in the hospital. He should see to it, then, that only men worthy of the hospital's ideal are given this privilege.

There is one superintendent in this country whose ability to meet this difficult problem is an inspiration. His hospital, as it happens, is one of "open staff." The superintendent has not raised any technical questions as to the merit of an "open" or a "closed" staff. To him competence and honesty are fundamental. He has made it his direct business to know what goes on in the operating room, and to know what happens in the particular case before the operation occurs. If a surgeon operates in that hospital without evidence of genuine ability, the superintendent, after the operation is over, quietly puts his hand on the man's shoulder and says, "We do not want you to come back again. Your work is not satisfactory. If you wish to make an issue of this matter, I will meet you. You are privileged to return, however, whenever you will show that you have acquired the training necessary to modern surgery."

The trustees support this man. What is the result? The hospital is still of the "open staff" type, but in practice it is more "closed" than most "closed staff" types. The trustees of this hospital are able to say to the people of their city that their hospital is a genuine guarantee of competent, honest service.

Why shouldn't the trustees of other hospitals be able honestly to guarantee to their communities honest, competent service? Such a condition is one of the things which the American College of Surgeons proposes to bring about. It proposes to deal with these problems in no uncertain or half-hearted fashion. The central part of its effort will be a series of pamphlets written so simply that the man who moves his lips when he reads can understand. These pamphlets will deal one after another with the things which make hospitals the right sort of institutions for the care of sick people. Sometimes it may be necessary to call meetings of the local commercial clubs, or of the other bodies of laymen, in order to waken up the community as to the actual conditions in their hospitals. If this course is necessary, it will be followed. The day has gone by when any sort of indifferent or incompetent practice can be shielded in a hospital. The day has gone by when hospital trustees may rest in an irresponsible attitude toward the trust imposed in them.

Again, what is the relation of the hospital to the county or local medical society? Are the facilities of the hospital freely at the service of the society? Is the spirit which dominates the work of the hospital an inspiration? Is it progressive and unselfish? These are merely some of the questions which the College of Surgeons proposes to answer in the fashion already indicated. It is probable that we shall begin with a study of the training of the internes. This problem is most closely related to our needs in the administration of the College. Further, if we go right to the bottom of the problem we shall find that it is really a question of what is the proper care of the patient. A full outline of this problem has already been sent to you.

You are a group of surgeons of more than average ability. You are deeply concerned with the advance of the profession; otherwise you would not be here. You are concerned that the great mass of people should know the right answers to the questions just proposed. In these things and by the very nature of your daily routine you are compelled to be philosophers. The process of thought which tends from anatomy to psychology, and then from psychology to philosophy is forced upon you. Philosophers rule the world. They do this to-day, and they always have done it. The man of action may not know that this proposition is true. But that is aside from the point. Now there is good philosophy and indifferent or bad philosophy. Of these you must choose. In other words, you must find and express thoughtfully the personal equations of your lives. You must express in terms which we all understand the x and the y of your equations. How will you do it? Are you in the practice of surgery primarily to make money? Are you in it primarily to relieve suffering and prolong life? Are you in it to lift your community to a plane higher than it would be without you? Can you find your equation in scientific research? Are the inspiration and thrill which come from entering an unexplored field of truth and in finding there something of lasting benefit to humanity—are these things known qualities in your equation?

That you answer such questions is what I meant when I asked you each to hold an annual meeting with yourself. Some time ago, near Nashville, I visited the old home of Andrew Jackson. Jackson, it seems, left a slave by the name of Alfred who outlived him many years. One day Alfred was asked if he "reckoned" that the General went to Heaven. "I dunno, suh," he replied. "He did if he wanted to." That is the sort of philosophy which stirs me. We can do things if we want to. We can do all that we hope to do if we really want to do it. If the objects of this organization really coincide with the desires deep in our hearts, we can turn our inspirations into facts in spite of any opposition in the world.

Now a word about fee-splitting. This is a subject which I should like to avoid. It is a disgrace that there is need even to mention it. But there is need. Any one who divides fees is a liar and a

thief. If milder terms would fit the case I would use them. They will not fit. This evil is the basis of unnecessary operating and of incompetent operating. The College has plans now to fight it beyond anything yet attempted. But we cannot go into that subject now.

The Board of Regents has just held a meeting. It has just considered the names of seven Fellows of the College about whom there is some evidence of the practice of division of fees. After full consideration, the Board dropped three Fellows from our list. Two of these are suspended pending further information. The Board voted, further, to make public the names of men expelled from Fellowship. (The name of a Fellow was read who was expelled for "reasons derogatory to the dignity of the College and inconsistent with its purposes.")

The work of the past year has developed a most important fact in this connection. A surgeon cannot engage in the division of fees and cover up the practice. The Regents do not propose, either, that the practice shall be covered up. They mean business, and propose to expel any Fellow from our group, however prominent he may be, whenever the facts justify such action.

We need your help, your co-operation, and your constructive inspiration. We need your belief in us; your confidence that nothing crooked is ever to be put over; your confidence that the biggest things that have ever happened in medicine are to be put over. When you joined the American College of Surgeons you did not join merely one more medical society. You joined a society which commands that if there is any white light in you, it must burn. It commands that you grasp the day's routine as a social service and in this twilight era that you illuminate those outlines, now only traceable, of the public good will which the profession should merit. It commands that you turn on the light.

ANOTHER STEP IN HIGHER MEDICAL EDUCATION.

Among the remarkable developments in medicine anywhere, at any time, are the changes that have occurred in medical education in the United States during the last ten or fifteen years. Once regarded as a disgrace, the standard of medical education in this country recently has advanced so rapidly that today it is equal to that of any other nation so far, at least, as the majority of medical teaching institutions are concerned. This change has occurred partly through the generosity of wealthy men and women who have contributed millions to medical schools and to medical research; partly because the medical profession itself became aroused to the wretched conditions in medical education, and undertook to rid itself of the incubus of the purely commercial medical school. Both were necessary to bring about the rapid advances that have placed American medicine in the high position it now occupies.

The announcement just made of the establishment, as a department of the University of Chicago, of a new medical school, complete with postgraduate departments, extensive hospital facilities, numerous research branches, with a standard as high as that of any medical school here or abroad, and with an endowment sufficient to meet the expenses connected with full-time, paid instructors in all departments, is one of the most important events connected with the rapid development of scientific medicine and medical teaching in this country. It means much not only to medical education, but, more important, to public health, for it will be not only a teaching institution—an institution that will make for better and more broadly and practically educated medical practitioners—but also an institution for the development of preventive medicine. It means much to the city of Chicago—once the home of more quack medical colleges and diploma mills than any other city in the world. It will aid the city, which was the plague spot of medical education, to rid itself wholly of the commercial school and to develop medical institutions second to none. But the influence of this new institution will be broader than the city or the state in which it is located. It will be national, and will reach out and stimulate good work in every part of the country.

To President Harry Pratt Judson, of the University of Chicago, and to Dr. Frank Billings, Dean of Rush Medical College, is due, to a large extent the credit for this achievement. It means the successful culmination of President Judson's ambition to carry out not simply the original plan of his predecessor—once looked on as a dream—but a greater and broader one than even President William Rainey Harper conceived.

Correspondence

November 10, 1916.

Dr. F. C. Warnshuis,
Grand Rapids, Mich.

Dear Dr. Warnshuis:

The editorial in the November issue of *The Journal of the Michigan State Medical Society* upon "The Nurse Anesthetist" has been read with much interest. Having had considerable experience in institutions in which anesthetics are given by registered physicians, as well as in institutions that employ specially trained nurses for this purpose, I can state positively that there are not two sides to the question.

The arguments given against the giving of anesthetics by well trained nurses apply equally to the physician, as well as the nurse, and the statement that "The administration of an anesthetic should never be intrusted to any but skilled individuals," covers the entire subject in a nutshell. There is not the slightest room for argument in the statement that the well trained nurse is more skillful in the administration of anesthesia than an equally well trained man. She is interested in the giving

of the anesthetic alone, and does not try to keep track of the operation as well. She therefore gives less ether and gives it according to the needs of the patient. She always watches the patient more carefully and is decidedly more gentle and careful in its administration during the first stage which makes for a better anesthetic throughout.

The statement that the person who administers the anesthetic must be competent to make a physical examination, to detect renal, circulatory and respiratory defects and to estimate the variance from the normal that disease or surgical conditions have produced, as well as that he or she should be allowed to select the safest indicated anesthetic agent is ludicrous. Those are things that should all be ascertained by the surgeon himself, or better still by the internist associated with him, long before operation. Any man who fails in this is not fit to do even the simplest form of surgery.

The administration of an anesthetic is an art and a woman becomes much more proficient than a man.

The only argument for the physician anesthetist is that it puts ten dollars more or less in his pocket while the patient receives poorer service.

Good surgery does not depend so much upon the skill of the man who holds the knife as it does upon team-work by all who take part in the operation. The most capable surgeon in the country does poor work unless he has assistants trained to work with him, and the well trained nurse anesthetist is the most important of his assistants.

Yours truly,
J. Walter Vaughan.

Note: Dr. Vaughan's contentions give expression of the viewpoint of one who seeks to justify the employment of a nurse as an anesthetist. We cannot agree that a trained nurse is a better, skillful or competent anesthetist than a physician who makes anesthesia his specialty. The expert medical anesthetist is trained to care for his patient and does not permit the surgeon's activities to arrest his attention. More might be said—we are waiting for the trained anesthetists to reply to Doctor Vaughan.
Editor.

Big Rapids, Michigan, Nov. 13, 1916.

Editor, Journal Michigan State Med. Society,
Grand Rapids, Michigan.

Dear Sir:

In the annual report of the Council of the State Society at the Houghton meeting, expression was given to some criticisms that had come from various counties in the state where the tuberculosis survey had been held, to the Chairmen of the Council. Neither the chairman nor any member of the council passing upon this report claimed to have any personal knowledge of the method of procedure in this survey. We were in sympathy with the avowed purpose of the survey and desired to see it successful and the object in view in mentioning it in the report was to bring out facts and bring those facts to the attention of the profession in the state. The reference to the survey in the report was not approved by the House of Delegates, but through some oversight the report was nevertheless published.

I have, during the past week, had an opportunity to observe the methods of the gentlemen engaged in conducting this survey in Mecosta County. I devoted as much time as was possible to attendance upon the clinics and entertained the members at my home, together with the members of the Mecosta County Medical Society, and Dr. Rich of Detroit conducted there a clinic upon several patients whom he selected during the afternoon to appear before the physicians in the evening.

Among the criticisms that came to me previous to last Ausust were those concerning the publicity methods in which it was alleged that there was too much personal advertising of the director, Dr. DeKline. There was no criticism of this kind pertinent in regard to the work in this county. The publicity methods were only such as I consider are perfectly proper to use. It is necessary, in order to bring the force of this investigation properly to the attention of the public, that publicity methods be used. In the work in this country there was no advertising of individuals. There was ample publicity of a proper kind, but it was all done in the name of the State Board of Health. This I believe, is entirely proper and the way the work should be done.

In regard to the clinical work, I cannot speak in too high terms. The examiners were all competent men and are so recognized in the medical circles of this state. Personally I wish to admit that I received some very valuable information during the few days of the clinic. All of the physicians in this city took great interest in the work and all are free to say that they benefited very much by the opportunity of associating with the splendid gentlemen who are devoting their time to this labor and receiving therefor very small compensation.

We were simply astounded at the number of cases coming up for examination. Nearly three hundred were actually examined and a very high percentage of that number were found to show some evidence of having tuberculosis. A great many of them were old cases that had been healed years ago, some of whom were showing a tendency to renewed activity of the disease, but by far the greatest number were cases who had not consulted a physician, who knew not what their trouble was further than that they were losing weight and feeling a little below par. The methods of physical examination and of applying the tuberculin tests it is quite needless to say were modern and well in advance of methods used by the average general practitioner. I am inclined to think that some of the practitioners in the state who have been sending in criticisms of the work of this clinic have not themselves attended the clinic and observed the methods used. Perhaps they are themselves unable to recognize incipient cases of the disease and therefore too hastily denounce the diagnosis of these examiners. For my own part

I am willing to admit that the man who is devoting his special attention to physical examinations and to the other tests made use of by the examiners to determine the presence of tuberculosis, is entitled to great respect for his opinion. It is not to be supposed, and it is not claimed by them, that their reports in every case are infallible. That would be an impossible result for any man to achieve in a single examination. I am satisfied that a great majority of the cases marked positively as Tb. infection will demonstrate themselves sooner or later to have that disease.

I am, however, more convinced even than I was last August that some of the physicians connected with this survey should favor the *Journal* of the State Society with more detailed reports of the work they are doing. I think there should be a report of many of the cases they see at every clinic. Particularly there should be a summary of the number of examinations and the number of active cases found in every county visited, and this information should be published in the Journal of the State Society so that our members may have an opportunity to judge of the work being done along this line.

It affords me pleasure to commend the work as it was conducted in Mecosta County and to recommend to physicians in counties to be visited in the future that they place themselves in touch with the clinic while it is in their midst and assure them they will receive nothing but profit from the association.

Very truly yours,

W. T. DODGE.

Deaths

Dr. Abner Hayward, 86 years old, one of the oldest physicians of Mt. Clemens died October 19 at his home. He was stricken with paralysis about a year ago. He came to this city in 1871 and was identified with the early history of the mineral baths and the development of bathing. He was highly respected by all who knew him.

Dr. A. P. Ohlmacher, of Detroit, died at Grace Hospital, Thursday night, November 9th. He was the author of a number of well known medical works written around his own research. He has been professor in a number of colleges and was director of pathological laboratories.

State News Notes

FOR SALE—Heinzelman Brothers Carriage, two passenger coupe.

It has Timken bearing running gear. Rubber tire. Oil lamps. Can be put on runners for winter. Upholstered in leather. Everything in first class running order. Fine looking rig.

S. L. Rozema, M.D.
425 Eastern Ave.
Grand Rapids.

The recent indictment by the Federal Grand jury in Newark, N. J., of "Dr." Jean F. Strandgaard, of Toronto, Canada, and George F. Hardacre, of Toronto, and a steward on the steamship "United States," has revealed to Chief Inspector E. R. Norwood, of the Customs Service in New York, what he believes to be a widespread conspiracy to defraud the Government out of customs revenue by smuggling salvarsan and neosalvarsan into the United States.

A most serious feature of this matter is the discovery by Inspector Norwood that these men also had in their possession a large quantity of spurious neosalvarsan. Upon analysis by the Government experts, the contents proved to be starch in the majority of the ampules and strained table salt in the others.

A further investigation showed that during July, 1916, Strandgaard had 15,000 ampules made in Jersey City, which upon his instructions were filled by the glass blower with either starch or salt. A remarkable coincidence is that during August and September, and as recently as the time Strandgaard was arrested in New York, physicians and drug stores all over the Middle West and the East were approached by women trying to sell, on the one pretense or another, the frauds made for Strangaard. These spurious products were put up in imitation of either the German or particularly the English package, as marketed by the German manufacturers in England before the war, in square pasteboard cartons. They did not appear in round aluminum packages, like the American package. They are very cleverly executed, and their outside appearance even led experienced physicians to be deceived.

The product has been sold in New York, Chicago, Milwaukee, Cincinnati, Peoria, Kalamazoo, Detroit, Terre Haute and Mobile, and other Western and Southern cities, and is undoubtedly still being peddled on account of the great profits accruing to the saleswomen.

There is no need to call the attention of physicians to the dangers connected with the use of such frauds. In view of the serious and possibly fatal results which would follow the administration of these fraudulent salvarsans, it is incumbent upon medical men who have any information about the distribution or sale of these frauds to communicate with Chief Inspector E. R. Norwood, U. S. Customs House, New York, at their earliest oportunity, or, in case of emergency, with the local police authorities.

Considerable interest has been aroused in medical circles by the announcement of the election of Mr. Louis R. Curtis, for 18 years Superintendent and Secretary of St. Lukes' Hospital, Chicago, as President of that Institution.

Mr. Curtis was born in 1865 in Philadelphia. He obtained his college training at Stevens, graduating as mechanical engineer. In 1889 he entered the hospital field as Assistant Superintendent of the

New York Hospital. During that period he attended medical college, not with an idea of practicing, but to better fit himself for his hospital work. From the New York Hospital Mr. Curtis went to the General Hospital of Elizabeth, New Jersey, staying there for about one and one-half years. From there he came to St. Lukes' Hospital, Chicago, as Superintendent and has been the dominating figure in that Institution, both as Superintendent and Secretary, until recently, and is now Vice-President in charge of the operation of the Institution. During the last years Mr. Curtis has also been prominent as a consulting engineer, especially among hospitals, and has introduced many advanced and successful ideas in hospital construction and organization. His wide experience among hospitals and medical men, coupled with his technical training, makes him peculiarly well fitted for his new position.

Mr. Frank S. Betz, under whose control the concern bearing his name assumed its present proportions, will continue with the Company as Chairman of the Board of Directors and give the organization the benefits of his long experience and training. His many and diversified interests are given as reasons for his retiring as active head of the Company.

The National Board of Medical Examiners held its first examination from October 16 to 21, in Washington, D. C.

There were thirty-two applicants from seventeen states, representing twenty-four medical schools, and of these sixteen were accepted as having the necessary preliminary and medical qualifications, ten of whom took the examination.

The following men passed:

Dr. Harry Sidney Newcomer, Johns Hopkins University.

Dr. William White Southard, Johns Hopkins University.

Dr. Orlow Chapin Snyder, University of Michigan.

Dr. Thomas Arthur Johnson, Rush Medical School.

Dr. Hjorleifur T. Kristjanson, Rush Medical School.

The second examination will be held in Washington, D. C., June, 1917. Further information may be had by applying to Dr. J. S. Rodman, Secretary, 2106 Walnut street, Philadelphia, Pa.

Rockford, Illinois, formerly Dr. Broughton's Sanitarium, established 1901, for the treatment of opium, morphine and other drug addictions, including alcohol and special nervous cases, is one of the best managed institutions in the middle west.

The demand for reputable institutions of this class has increased, and our endorsement of this institution should be sufficient recommendation to physicians who have cases of this kind needing sanitarium treatment. Patients receive good care, humane treatment and enjoy the comforts of a good home.

Dr. Kellog Speed, of Chicago, who has recently returned after six months service in charge in a Base Hospital in France, will address the Kent County Medical Society on December 6th. His address will be illustrated with numerous lantern slides.

The following surgeons of Detroit were made Fellows of the American College of Surgeons at the Philadelphia meeting: W. J. Cassidy, W. A. Hackett, C. H. Judd, R. D. McLure, G. E. Potter.

Dr. C. B. Burr, of Flint, addressed the Kent County Medical Society on Nov. 22.

Dr. A. T. Laberge, of Detroit, has been appointed Health Officer of Grosse Point Township.

Dr. Geo. G. Caron, of Detroit, has moved his offices to the Kresge building.

Mercy Hospital, Bay City, graduated a class of six nurses on Nov. 11th.

Dr. H. R. Pitz, of Kalamazoo, has removed to Detroit. He will limit his practice to diseases of the eye.

Dr. M. C. Sinclair, of Grand Rapids, is seriously ill with but little hope of recovery.

County Society News

EATON COUNTY

The Eaton County Medical Society held it's fifth regular meeting at Eaton Rapids, Thursday, Oct. 5, 1916.

The Scientific Program as follows:..

1. "Clinic in Neurology."
 By Carl D. Camp, M.D. of Ann Abor.
2. "Hospital in a Small Town."
 By A. J. Bower, M. D. of Greenville.

The clinic by Dr . Camp was one of the most instructive clinics ever conducted before our Society, especially for the general practioner. Also the paper by Dr. Bower proved to be most interesting. A general discussion followed.

A report of the State Medical meeting at Houghton given by Dr. F. J. Knight proved that all guests at this meeting were royally entertained, enjoying a real outing as well as a fine scientific program.

Following the meeting members and guests were entertained by the Eaton Rapids physicians at an informal dinner.

GRATIOT-ISABELLA-CLARE COUNTY

The Gratiot-Isabella-Clare County Medical Society held its annual banquet for the members and their wives at St. John's Episcopal Church, in Alma, on Thursday, November 9th at 6:30 o'clock p. m. President Biddle was with us and desired to give a

clinic on Dermatology at Brainerd's Hospital at 3:30. The ladies were entertained by Mrs. Brainerd and the wives of the Alma physicians. After dinner President Biddle addressed us on the modern relation of the physician to Public Health questions. Rev. Frank Jackson was called on and by his remarks showed he was deeply interested in the social and public health side of medicine. All agreed that we had both a profitable and enjoyable meeting and social time.

LAPEER COUNTY

The Lapeer County Medical Society met on Tuesday, Nov. 7, 1916 at Lum, Mich. as the guest of Dr. N. D. McVicar. The regular order of business was dispensed with until after we were given very instructive talks by Drs. T. A. McGraw, Jr., and B. R. Shurly of Detroit Mich.

Dr. McGraw showed us how the Allen treatment of Diabetes should be administered in order to obtain the best results and put it in such a way that one could not help but realize where the treatment had been given by many of us without considering the essential factors of caloric value of the different foods, and thereby not getting the desired results.

Dr. Shurly talked on the local infections with special stress put on the differential diagnosis. He handled the subject in a very capable manner and left an impression on the members of the society that will be remembered for a long time.

The business end of the meeting was then taken up and the principle item of interest was in the passing a motion to the effect that the dues of the County Society he made $1.50 instead of $1.00. This will make the total State and County dues for next year $5.00 instead of $4.50.

After the meeting we were entertained by Dr. McVicar and his wife at a delightful luncheon which was thoroughly appreciated by those present.

The meeting proved a success in every way, although we could have had a little larger attendance. The next meeting will be the annual meeting at Lapeer which will give the members a chance to be the guests of the Lapeer members. Election of officers and payment of dues will be the head attractions for the meeting.

J. H. Douglass, Secretary.

ST. CLAIR COUNTY

The St. Clair County Medical Society held its regular monthly meeting at the Harrington Hotel, Thursday evening, November 16. Dr. H. McCallum of London, Ont., being our guest for the evening. After being served with a very fine dinner the President, Dr. McKenzie introduced Dr. H. McCallum who gave a very fine address on "The Different Phases of the Nervous System," which was appreciated by all. The attendance at this meeting was the largest of any held during the year, over fifty being present.

The St. Clair County Medical Society held an open meeting at the Elk's Temple, Thursday evening, November 2nd, which was attended by a large number of citizens.

Dr. DeKleine, of Lansing, was our guest for the evening and gave a very interesting talk on Tuberculosis, advocating the building of a County Sanitarium. At the election on Nov. 7th the county voted to bond for $15,000 to build a sanitorium on the property presented by Mr. and Mrs. Baird. Drs. McCue of Goodell's, Chester of Emmett and Willson of Port Huron also made short addresses.

TRI COUNTY

A meeting of the Tri County Medical Society was held at the County Building on Nov. 2, 1916, when the following officers were elected:

President—Dr. John F. Gruber, Mesick.

Vice-President—Dr. C. E. Miller, Cadillac.

Second Vice-President—Dr. D. Johnson, Marion.

Secretary-Treasurer—Dr. S. C. Moore, Cadillac.

Delegate of the State Society—Dr. Stickley, Mesick.

Alternate of the State Society—Dr. S. E. Neihardt, South Boardman.

Resolutions were adopted favoring the Tuberculosis Survey.

Miscellany

PROPAGANDA FOR REFORM.

Nuxated Iron.—Nuxated Iron is advertised in newspapers with the claim that it is not a patent medicine or secret remedy. In the popular meaning of the words, "Nuxated Iron" is just as much a "patent medicine" as is "Peruna," "Lydia Pinkham's" or "Pierce's Favorite Presciption." Also, "Nuxated Iron" is essentially secret in composition. While the public is led to believe that the preparation consists chiefly of nux vomica and iron, analyses made in the A.M.A. Chemical Laboratory and elsewhere indicate that it contains much less than an ordinary dose of iron and practically no nux vomica. It is sold under claims that are both directly and inferentially false and misleading not only as regards its composition but also as regards its alleged therapeutic effects. Nuxated Iron is also advertised in the Medical Brief, a publication which has for its editor the "medical expert" for the Wine of Cardui concern in the recent case against the American Medical Association and as its publisher one who, through the "National Druggist," has long been the mouthpiece of the "patent medicine" interests (*Jour. A.M.A.*, Oct. 21, 1916, p. 1244).

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